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ISSUE 35 ● MARCH 1994 ● £2.95

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INSIDE – PROTEXT 6 REVIEWED

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New Colour Printer £447+VAT £525.23

360dpi Inkjet printer. Visit out showrooms compair Canon/Epson/HP/Star

Canon Inkjets

		Exc VAT	Inc VAT
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BJ200	Inc Sheet Feed	£239	£280.83
BJ230	wide carriage	£285	£334.88
BJ300	360dpi	£329	£386.58
BJ330	wide carriage	£379	£445.33
BJC800	fast & colour	£1219	£1432.33

All Citizen printers have a 2 year warranty

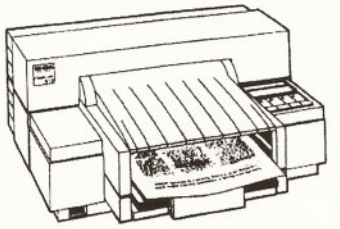
Citizen

	Exc VAT	Inc VAT
120D+ 9pin Mono	£96	£112.80
Swift 90 9pin Mon	£118	£138.65
Swift 90 9pin Colour	£130	£152.75
Swift 200 24pin Mono	£160	£188.00
Swift 200 24pin Colour	£172	£202.10
Swift 240 24pin Mono	£194	£227.95
Swift 240 24pin Colour	£206	£242.05
New Citizen Projet II	£203	£238.53
PN48 Portable	£189	£222.08
Notebook 2 Col. Port.	£235	£276.13

Citizen Projet Inkjet

Similar to Deskjet but Epson and Deskjet compatible

Special Offer £160+VAT £188.00



HP Deskjets

300dpi, mono or colour. Laser quality print	Exc VAT	Inc VAT
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Deskjet 510 mono	£197	£231.48
Deskjet 500C colour	£234	£274.95
Deskjet 550C colour*	£389	£457.08
Deskjet 1200C colour	£981	£1152.68
Deskjet 310 mono	£169	£198.58
Colour kit for 310	£30	£35.25

*550C has Colour & black cartridges resident at the same time.
All deskjet prices include 3 year warranty

New HP Colour Printer

Deskjet 310C

300dpi optional colour inkjet printer.

310 Mono £169 +VAT £198.58
310C Colour £199 +VAT £233.83

Prices include 3 years warranty

HP Lasers

	Exc VAT	Inc VAT
Laserjet 4L 4ppm PCL5	£469	£551.08
Laserjet 4P 4ppm PS2	£737	£865.98
Laserjet 4ML 4ppm 4M	£755	£887.13
Laserjet 4MP 6M PS2	£1047	£1230.23

Amigas

A600

New games packs

A600 Wild Weird & W. pk	£189
A600 Hd 20Mb Epic pack	£269

Zool pack A600/A1200 add £14

A1200

New free games packs

5x faster. Workbench v3. 2M ram. Custom graphic 256K col. from 16.7M

A1200	Software Pack C, R	D
No Hd	£289	£319
80M Hd	£489	£529
120M Hd	£519	£559
170M Hd	£559	£589

Key to Software packs:
C - Comic Relief
R - Race & Chase
D - Desktop Dynamite NEW

All Amigas have Commodore Hard Disks with CBM on-site.

Amiga A4000

4000/030	2M	4M	6M
80M Hd	889	959	1039
120M Hd	959	1029	1109
214M Hd	1009	1079	1159
A4000/040 6Mram 120MHd			1919

Upgrades

A500 0.5-1Mram +clock	£24.90
A500 0.5-1Mram no clock ...	£19.90
A500+ 1Mram +clock	£44.50
A600 CBM 1Mram no clock	£29.90
A600 CBM 1Mram +clock ..	£39.90
A4000 32bit 4M Simm	£159.00
A4000 4M (1M x 32bit) ram	£157.00

WorkStation

Expansion System

Monitor stand with shelf for drives etc. Strong metal construction made from 14SWG steel epoxy coated. No Cables or mouse are included.

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Monitors

Commodore

Multiscan
1942 £344 14" Stereo Col. Dot pitch .28

Sorry 1940 no longer available

Commodore 1084S

14" Stereo Colour Monitor 0.42mm. Medium Resolution

£199 with cable — £195 without cable

Accessories

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A500 Printer cable	£7.95
Modulator/Disk Extension	£10.95
23way Plug or socket	£2.95
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Type Through Covers	£17.50
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Mouse House	£2.95
1M internal 3.5" drive	£49.00
A500 replacement PSU	£39.00
The NEW 1200 Rocgen Plus	£165.00
Disc Wallet for 32 disks	£7.95
CBM A1011 Floppy drive	£48.00
Opal Vision SPECIAL OFFER	£299.00
360K 5.25" A2000 floppy	£29.00
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Stylus 800

360dpi escape P2 compat.

New Epson Piezo Inkjet Printer £193+VAT £226.78

Epson

	Exc VAT	Inc VAT
LX100 9pin +Sheet Fd	£109	£128.08
LX400 9pin Mono	£94	£110.45
LX850 9pin Mono	£139	£163.33
LQ570+ 24pin Mono	£199	£233.83
Stylus 300 Inkjet	£184	£216.20
Stylus 1000 Inkjet A3	£353	£414.78
EPL5000 6ppm Laser	£439	£515.83
EPL5200 6ppm Laser	£495	£581.63
EPL8100 10ppm Laser	£699	£821.33

Panasonic KXP1123

Probably the best 24pin mono printer available. £131+VAT £153.93

Panasonic

	Exc VAT	Inc VAT
KXP1170 9pin Mono	£95	£111.63
KXP2180C 9pin Colour	£139	£163.33
KXP2123C 24pin Colour	£164	£192.70
KXP2124 24pin printer	£215	£252.63
KXP4410 5ppm Laser	£442	£519.35
KXP4430 5ppm Laser	£535	£628.63
KXP4440 11ppm PS	£825	£969.38

Dust Covers

For Printers, Monitors, Computers most types in stock from £4.70

Ink Refills

BJ10 twin refill varoius colours	15.90
Deskjet twin refill various colours	15.90

(We stock 200 types of ribbons)

Star

	Exc VAT	Inc VAT
LC20 Mono 9pin	£101	£118.66
LC200 Colour 9pin	£153	£179.78
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LC24100 Mono24pin	£136	£159.80
LC24200 Colour 24pin	£195	£229.13
LC24-30 Colour 24pin	£187	£219.73
LC24-300 Colour 24pin	£235	£276.13
Star SJ48 inkjet	£165	£193.88

Star LC100

9pin colour £118+VAT £138.65

Star SJ-144

New Colour Printer £345+VAT £405.38

360dpi thermal (suitable for transfers)

Sheet Feeders

	Exc VAT	Inc VAT
Canon BJ10 series	£44	£51.70
Citizen Swift range	£67	£78.73
HP DeskJet 310	£46	£54.05
Star LC range	£51	£59.93
Panasonic KXP range	£72	£84.60

Printer Packs

A starter pack for all printers consisting of printer paper and a connection cable costs

only £5 (£5.88 Inc VAT)

A stand is an additional £5.00 +VAT

Citizen's Print Manager

These advanced printer drivers transform colour printout's to laser type quality

Version 1 (224 & 24e)	£5
Version 2 (Swift series 2)	£10

Printer Drivers

Canon BJ-10e/ex	£5
Deskjet Colour	£5

Printer Drivers are 1/2 price with printers

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Cumana CAX354

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40Mb A530 Combo	£389
80Mb A530 Combo	£489
120Mb A530 Combo	£585

A1500

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80Mb Hard Disk	£289
120Mb Hard Disk	£385
Controller (no disk)	£119

GVP ram £45.82 per 1Mb

GVP PC Emulator £95
286 16MHz Emulator for HD8+/A530

Mice

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Genius Happy Mouse	12.90
Manhattan Mouse	13.90
Naksha Mouse	15.90

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100x3.5" DS/DD 135tpi	59.93
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AMIGA SHOPPER

ISSUE 35 • MARCH 1994

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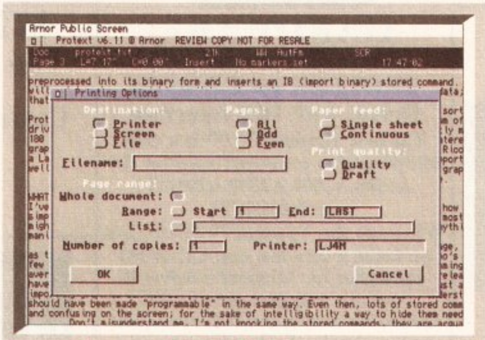
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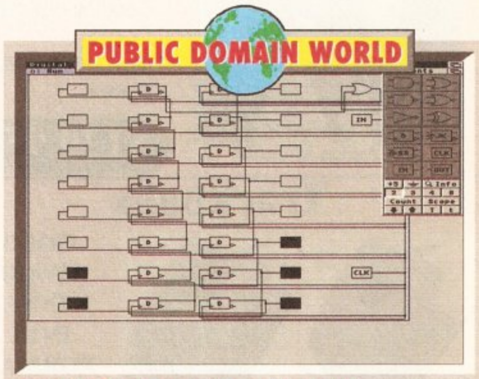
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Desktop Publishing 77
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Up and running

Now you and your Amiga can really get going, thanks to our mammoth feature for beginners. We'll fill in the blanks left by Commodore's manuals and make sure you've got a clear idea of what's going on inside your machine; and our huge glossary will ensure that all that jargon doesn't trip you up. Get this lot under your belt and you'll find yourself well on the way to being a power user



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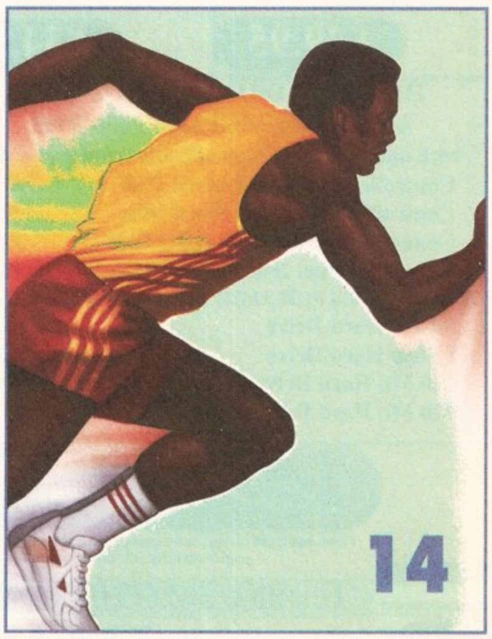
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Amiga Shopper Best Buy



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Touch UP and Merge It software.

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Touch UP, Merge It and Special OCR software.
Minimum system requirement 2 Mb RAM and a Hard Disk

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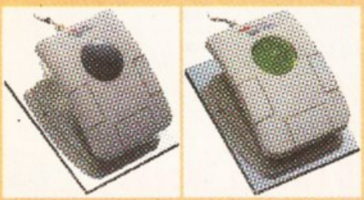
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ST REVIEW 91%

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HARDWARE

***NEW:* TANDEM CONTROLLER for CD-ROM Drives with IDE interface**

The new Tandem CD+IDE is a dual multifunction controller card for the A1500,A2000,A2500,A3000(T) or A4000(T)
Whereas the Tandem CD+IDE focuses on being a very low cost CD-ROM controller for Mitsumi™ drives it contains a second generic IDE controller to support IDE harddisks or the popular SyQuest™ SQ3105A 3.5" removable media drive.
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One of the cheapest Amiga CD-ROM solutions around giving you much more than just that at RRP of only $89.00 or £69.00

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- Supports Mitsumi™ LU005 or FX0011D CD-ROM drive
- Supports SyQuest™ SQ3105A 3.5" removable media drive.
- Supports most IDE hard drives
- Includes SO9660 CD-ROM filesystem
- Includes "PlayCD" utility for audio operation
- Complete online documentation
- For A1500, A2000, A2500, A3000(T) or A4000(T)
- Compatible with Workbench 3.1 CDFileSystem, BabelCDFS, ASIM CD-ROM FileSystem and single session Photo-CDs

RequiresKickstart 2.04 or above

MIGRAPH COLOURBURST

The new 262,144-Colour Hand Scanner
for all Amiga Systems
Comes complete with Scan Kit Software and Junior OCR Software

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Multi I/O card for Amiga series 1500/2000/2500/3000 (T)/4000 (T)
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30 Mb Hard Drive	£89.00
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COMMENT



The editor, Cliff Ramshaw, offers his penny's worth...

Hello and welcome to another issue. Our main feature this month is designed to help all you beginners. I'm not talking about absolute beginners – you should have at least read the manuals that came with your machine and done some experimenting – but people who are looking to step upwards and start *really* using their Amigas.

I heartily commend the feature to those of you who consider yourselves Amiga veterans, too – I know I learnt a few things reading through it.

Speaking of beginners we're joined by two new team members this month: Graeme Sandiford joins us as technical writer, while Nick Aspell takes over as our art editor. Great to have you on board lads!

MERIDIAN TAKE THE HELM

Meridian Software Distribution has been appointed as the UK distributor of Eagle Tree Software's new multimedia authoring system *Helm*.

Helm has all the features and tools you'll find in most of its competitors and it also features a unique Action Editor that has been designed to aid the integration of graphics, animations, text, sound and music files when creating your multimedia applications. *Helm* is AGA-compatible and can be purchased from Meridian for £99.95.

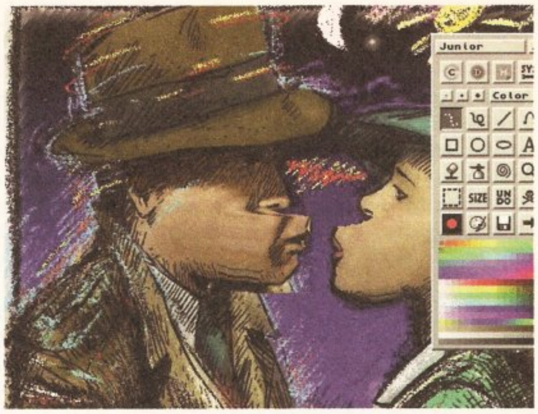
Meridian will also be distributing *Adorage v2.0* published by HS&Y from Germany (£79,95), *Audio engineer 2.0 Plus* (£199.95) and *TypeSmith v2.0* (£169.95). Call Meridian on 081-543 3500.

24-BIT BONANZA

The Amiga Centre Scotland have made several reductions across a range of their extensive graphics hardware and software products.

TVPaint 2, widely regarded as one of the best 24-bit paint packages around, is now available for under £250. Alternatively, you can buy *TVPaint* with the Harlequin 2000 24-bit graphics card for under £1,000. The Retina graphics board has been reduced to £328 (1Mb), £389 (2Mb) and £492 (4Mb).

In the sound department, the Amiga Centre are distributing Maestro Professional – a Zorro II sound board that provides 16-bit input and output as well as direct-to-hard disk recording. It also comes with the *Samplitude* software package. If used in conjunction with the optional backup software and a DAT recorder, it can be used for hard disk back-up with storage for 2Gb of data.



The Amiga centre has made the excellent TVPaint package available with the Harlequin 2000 24-bit graphics card for less than £1,000.

Toccata is a sampler that offers three stereo inputs and 16-bit sampling at speeds of up to 48KHz. When used in conjunction with VLAB Y-C's Interleaved Frame Recording (IFR) you can digitise images and sound together. It's also supplied with *Samplitude*. Maestro Pro is priced at £612 and Toccata costs £370. The Amiga Centre can be contacted on ☎ 089-687 583.

ON THE BUSES!

Commodore's already successful Amiga CD[32] is now playing a key role in education. After a much publicised nine-month, £4million face-lift, the London Transport Museum in Covent Garden has re-opened it's doors to the public. It now features a new multimedia centrepiece based on 109 CD[32] machines. They are being used to provide visitors with 'hands on' access to information in an interactive way that conventional audio-visual systems could not match.

The Amigas supply a range of text, animation, graphics and sound effects on AVIDS (Audio Visual and Interactive Displays). Visitors will be able to control subtitled video sequences and access hundreds of tramways and underground routes as well as information about specific periods, vehicles and locations. They can even go on simulated journeys in which they are in the driving seat.

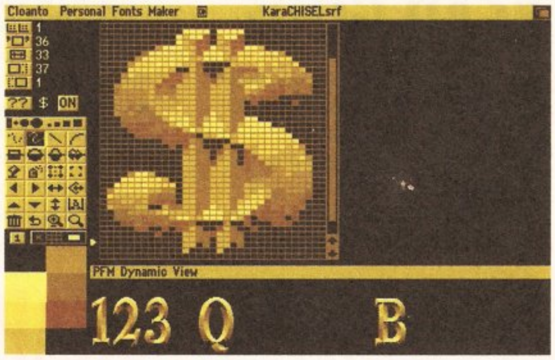
PERSONAL FONTS MAKER 2.0

Cloanto, the makers *Personal Paint* (now in version 4), have just completed *Personal Fonts Maker 2.0*. This incredibly useful program has been designed to enable the easy creation of Amiga fonts for use in video titling, multimedia projects and other applications.

Personal Fonts Maker 2.0.'s interface is similar in operation to *Personal Paint*'s, and even shares some of its tools and processes so users of *Personal Paint* should find it easy to use. The current version supports 256-colour fonts on AGA machines, anti-aliasing (with an option to use vector fonts as a point of departure) and right-to-left fonts.

It is available from Meridian for £59.95.

Contact them on ☎ 081-543 3500.



Personal Fonts Maker 2.0 makes creation and editing of Amiga fonts easy, or at least that's what is claimed.

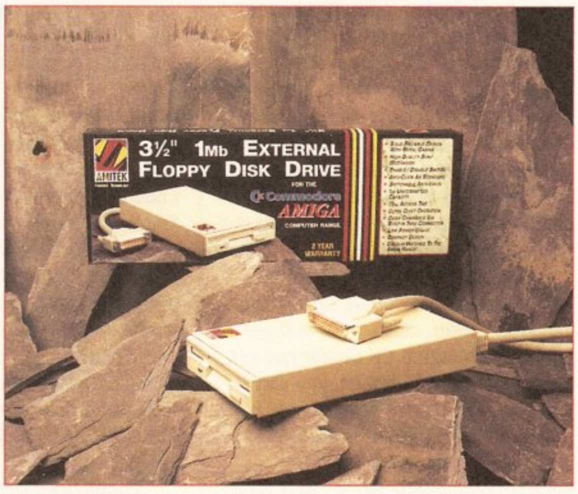
DISK DRIVE WITH HARDWARE VIRUS PROTECTION

Silica Systems are currently distributing Amitek's Deluxe Amiga disk drive.

The drive features anti-click technology, hardware virus-protection and a Sony drive mechanism.

It comes with a price-tag of £59 (including a 2-year warranty)

Contact Silica Systems on ☎ 081-309 1111 for more info.



Amitek's new deluxe drive with built-in virus protection.

NEW AGA GRAPHICS CONTENDER

TruePaint (£69) is an AGA paint package that is bidding for *Brilliance*'s AGA paint package crown.

The program's release has been delayed, not as long as *Brilliance*, and should be available before the end of January. *TruePaint* promises a respectable range of tools such as a light table for editing animations, MINIPIC which will give you a quick view of your pictures and extensive macro functions. It supports JPEG IFF as well as its own *TruePaint* format. It works in 24-bit internally and can produce 24-bit and HAM8 files. *TruePaint* will work on any AGA-equipped Amiga and is available from Gasteiner on ☎ 081-365 1151.

EXPAND YOUR CD[32]

Those of you who have purchased or are thinking of purchasing CD[32] with expansion in mind can now breathe a sigh of relief. The first expansion module has arrived. The SXI from Microbotics will slot into the CD[32] expansion port enabling a keyboard, floppy drive, additional memory and a printer to be used. Indi Stores are currently stocking a specially-priced bundle that comprises a CD[32] console with five games, a Zappo floppy disk drive, keyboard and an SXI module for £479.99 (a saving of £46 on the normal price of £525.99). All of the components are available separately; the expansion module for £139.99, £45.99 for the keyboard, and a sale price of £48.99 for the Zappo floppy drive. You can contact Indi Direct Mail on ☎ (0543) 419999.



The time has come to expand your CD[32] beyond the realms of mere gaming.

MULTIMEDIA PRICE BREAKTHROUGH!

At last an affordable CD-ROM drive for the Amiga. The Toshiba XM4101 is available from The First Computer Centre for £219. While this is the kind of price PC owners have been enjoying for some time, it is definitely something of a breakthrough in price for the Amiga multimedia enthusiast.

The XM4101 has a SCSI-2 interface, CDDA across SCSI bus, 300K/s transfer rate, access time of 385ms, is Photo CD-compatible and operates at dual speed. It fits into the 5.25-inch bay of a 4000 and will read CDTV, ISO 9600 (PC), CD[32] and Mac formats. It also comes with PD drivers and an as yet untested Photo CD reading extension for *ImageFX*.

There are also external versions for 3000s and 500s equipped with SCSI, as well as the XM3401 and CD 50 drives that will enable portions of music from audio CDs to be copied to an Amiga DOS file. The drives and suitable SCSI interface are available from The First Computer Centre on ☎ (0532) 319444.

MIDI SHOW

Amiga users who love music but suffer from an unreasoning fear of MIDI technology, will find help and advice at a MEMS '94 (MIDI Electronic Music and Recording Show) at Wembley in April.

The show will be the venue for series of seminars aimed at demystifying MIDI. You'll also have an opportunity to visit the exhibition's Information Centres and Advice Clinics where you'll receive help with your musical problems from respected industry personalities. The event will be held at the Wembley Conference and Exhibition Centre from the 22nd to 24th of April. Advance tickets cost £5 (☎ 0222 512128) or pay £8 on the day.

WALKABOUT SOME MORE

Walkabout Music of Cornwall have yet more digitally mastered sample disks. Their new disks comprise new drum and percussion loops, brass, strings, pianos and woodwind instruments. The collection, which has always catered for a wide range of musical tastes, now covers more mainstream sounds and effects such as techno. The complete collection is available for £59.95, 1-9 disks are £2.50 each, 10-19 disks £2.00 each and 20 or more for £1.75 each. For more information call Walkabout on ☎ 0726 813 827.

ALLIANCE OF POWER

In a trans-Atlantic coup that is certain to benefit the UK Amiga-using community, Bedford-based Power Computing are now DKB Software's official distributors.

One of the first products of this alliance is the new 4091 FAST SCSI-2 card for the Amiga 4000 and 3000. This was originally designed by Commodore and has now been licensed to DKB for manufacturing and marketing. Unfortunately it is incompatible with Buster chips in some early 4000s.

Power and DKB forged the new agreement following an Amiga-world shattering meeting at the World of Commodore Expo in Toronto last December. The upshot of this 'power-meeting' is that UK-based Power Computing will have exclusive distribution rights for the DKB 4091 interface and all of DKB's future developments.

XCAD GOOF

Unfortunately in issue 33 our review of *XCAD*, the Amiga's premier CAD package, included the wrong company name and telephone number. The correct company is Digital Multimedia Limited and they can be contacted on ☎ 081-977 1105. We would also like to take the opportunity to point out that the *XCAD* Christmas offer is no longer standing and the current recommended retail prices are £129.99 for *XCAD 2000* and £329.99 for *XCAD 3000*.

However, if you're lucky you might find a dealer with some of their Christmas stock left.

THE PROGRAMMING EDGE

American software utilities manufacturer Inovatronics have just released *Edge*. This is a text editor that InovaTronics claim to be easy to learn and ideal for programming projects and script editing . It also features AREXX support, auto indent, a local and a global clipboard, a fully featured find and replace function and extensive block commands such as printclip and uppercase. *Edge*'s main attraction to programmers is its on-line dictionary for C programmers and list of Amiga-specific words such as those used in Intuition code. Another useful programming tool includes Bookmarks that make it easier for you to jump back and forth within large documents. To find out more about Edge, contact Inovatronics inc ☎ (0707) 662861.

17 BIT CONTINUATION DISC

17 Bit Software have just announced the latest volume of their collection of Public Domain on CD-ROM. The disk is crammed with over 600 games and covers the company's range of graphics, utilities, applications, fonts and demos from disk 2302 to date.

This latest disc includes a very useful index and file search system that can be used with discs A and B as well as the continuation disc.

The disc is available from 17 Bit Software for £19.99 call the company on ☎ 0924 366 982.

SNAP TO IT!

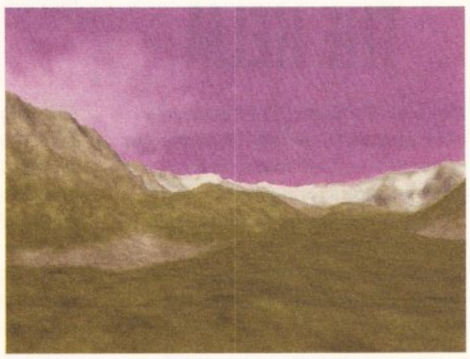
Anti Gravity Products of California (the creators of *Humanoid*) have completed work on an a line of products that will aid the creation of natural or hard-to-model 3D shapes.

Snap Maps is essentially a combination of 24-bit colour maps, bump maps and clip maps. Elements from these collections can be used as templates with any 3D package to produce realistic and sharp images.

The *Fields and Foliage* volume contains maps for creating petals, vines, bark, branches, leaves and that most awkward of awkward of objects, grass. *Materials and Fabrics* includes wicker, cloth, nets and even fences. Although a UK dealer has not been established just yet, you can purchase them directly from Anti Gravity Products in the United States for $129.95 each. For more information call AGP on ☎ 0101 310 393 6650.

VISTAPRO LITE... VISTA FOR 2MB AMIGAS

Great news for Amiga owners who have more ambition than RAM. Virtual Reality Labs of California have just finished work on *VistaPro Lite*. This is the latest version of its popular but memory-hungry, fractal-landscape generator.



Never thought you'd be able to make full use of Vista Pro? Well think again, and think Lite.

VistaPro Lite has many of the features of the highly-regarded *VistaPro 3.0*, including AGA support. However, while full-blown *Vista* requires 5Mb of memory to support its graphics modes, *VistaPro Lite* will render landscapes using just 2Mb of RAM by making use of memory-saving techniques and a new 'Tiny' landscape size.

Prices have not been confirmed but Meridian Software Distribution can be contacted on ☎ 081-543 3500.



INDI DIRECT MAIL is original and very exciting. Before you buy mail order you must first be confident that you will receive the product you've ordered and that the supplier will still be there in the future, should you need them.
A mail order purchase from INDI is a safe and secure decision and here's why. Indi is a wholly owned subsidiary of a public company now in its eleventh year of trading and specialising in the supply of computer products. With a group turnover approaching £30 million per annum, INDI have the resources and the purchasing power to offer you the best deals, deliver them next day nationwide and always be around when you need us.

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INDI are now able to offer competitive credit facilities on all orders over £200. All credit facilities are subject to status and applicants must be over the age of 18. If you would like a quote, simply call our sales line where acceptance can normally be notified within the hour. We are also able to offer Credit Insurance to cover repayments in the event of sickness or unemployment.

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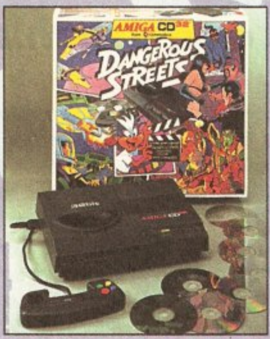


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Hi. Did you have an absolutely amazing Christmas and did Santa bring you everything you hoped for? I certainly hope so. Well folks, it's not easy writing the Indi Column 2 weeks before Christmas to meet deadlines for the January Magazines but here goes. At the time of writing there seems little doubt that the Amiga Desktop Dynamite Pack has been a major success story with Sales exceeding every prediction, well done to David Pleasance and his team at Commodore.
Without a doubt the big news has been Commodores decision to add two extra titles to the CD32 Bundle making 4 in total (5 if you buy from INDI). This week INDI have formally announced the SXI Expansion Module for the CD32 allowing the addition of a keyboard and other peripherals. The implications of this are very important for both existing Amiga owners and potential CD32 buyers. It is now a real alternative to buy a CD32, add an expansion module and keyboard and effectively own an Amiga 1200 with a CD drive rather than the alternative of buying an Amiga 1200 and then adding the CD32. Developments are moving very quickly in this area. I will keep you up to date with more information next month.
Best wishes,
Jakki Brambles

Amiga CD32 FREE OSCAR, DIGGERS, WING COMMANDER AND DANGEROUS STREETS PLUS INDI EXCLUSIVE FREEE LEMMINGS



This is the news that all Commodore enthusiasts have been waiting for the new Microbotics SX1 Expansion module arrives January 1994. The Amiga CD32 is no longer just the best 32 bit CD console around, it is now a fully expandable computer, Add a keyboard and printer and increase the memory to 8 Mb, connect to another Amiga, the choice is yours.
The microbotics SX1 is an internal expansion device that simply connects to your Amiga CD32 via the FMV port,the FMV module then plugs into the SX1. Connection could not be simpler.

KEYBOARD OPTION Add a key board by simply plugging into the SX1 and turn your CD32 into a real computer

PRINTER OPTION Now that you have a real computer, why not add a Panasonic Printer and enjoy serious graphics and Word Processing.

EXTERNAL FLOPPY DRIVE OPTION Add a Zappo Floppy Drive and have access to the thousands of low cost Amiga titles.

MEMORY EXPANSION MODULE Increase the memory up to 8Mb by the simple addition of Industry standard 32 - bit Simms.

New Amiga CD32 Pack	Normal Indi Price	Launch Price
1) Amiga CD32+ 4 games + Lemmings	£289.99	£285.99
2) Zappo Drive	£49.99	£48.99
3) Keyboard	£45.99	£45.99
4) SXI Expansion Module	£139.99	£99
	£525.99	£479.97

SAVE £46

New CD32 Owners

Can now enjoy all of the advantages of real computing by adding a keyboard and other standard peripherals. Add a floppy drive and enjoy access to thousands of low cost Amiga titles. Add a printer and move into graphics and word processing. The expansion possibilities are as flexible as if you owned and Amiga 1200

SEPARATE PRICES
SX1 CD32
Expansion Module £139.99
CD32 Keyboard £45.99
Zappo Drive sale price £48.99

Commodore 1942 Dual Sync Monitor



This new monitor has been specially designed for the New Amiga 1200 and 4000 computers in order for you to enjoy their fantastic graphics to the full. The 1942 Monitor features built in stereo speakers.

£347.99

Commodore 1084 Stereo Monitor



The Commodore 1084s Stereo Monitor. Compatible with all Amiga products. Featuring
* Stereo Sound
* High resolution display
* Ergonomic Design
* Full Amiga Connectivity Pack.

£189.99

Samsung 14" VGA Monitor

Make no mistakes, this is a top quality EGA colour monitor, infact we defy anyone to notice a difference between the Samsung 14" colour Monitor and a Commodore 1942, except in the crucial area of price.
* Twin Stereo Speakers and Amiga Cable.
* 12 Months Warranty.

£339.99

Zappo External Floppy Drive



You've seen all the reviews on this popular and affordable second Amiga drive. "Compatible with all Amigas Quality 9 out of 10." Exceptional value for money. Amiga Computing

£48.99

Sharp Monitor / TV



The superb Sharp 14" Monitor / TV provides a real alternative to a Commodore Monitor with full function remote control 39 channel electronic auto search tuning, digital on screen display and 1.5 watt Mpo audio output. All you need to know is the low low price. The Sharp Monitor / TV is the product for you complete with scart socket and connectivity cable and including 12 months Warranty. £169.99

£169.99

New Low Price IDE Internal Hard Drives

Indi can now offer top quality 2.5" Internal Hard Drives for the Amiga 600 and 1200 at unbeatable prices. All drives come complete with cable and installation software.

80Mb 2.5"	Internal HD's	£189.99
120Mb 2.5"	Internal HD's	£200.99
170Mb 2.5"	Internal HD's	£239.99

2 Mb Smartcard

The original and still the only fully PCMCIA compatible memory card for the A600 and A1200. Comes with lifetime guarantee. Beware of cheap immitations.
INDI PRICE £99.99

4 Mb Smartcard

Same as above but maximum 4Mb.
INDI PRICE £155.99

Zappo 601

Trapdoor upgrade for the Amiga 600, 1Mb with RTC.
INDI PRICE £49.99

Zappo 601 NC

As above only 512K, no clock
INDI PRICE £29.99

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The AS Shareware Collection volume IX

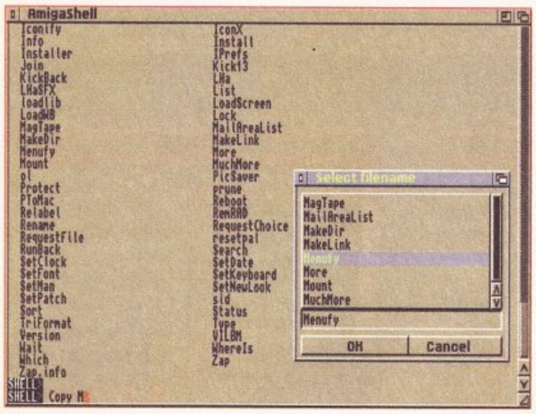
How to access and use this issue's cover disk.

HDCLICK

Workbench 2.0 and above

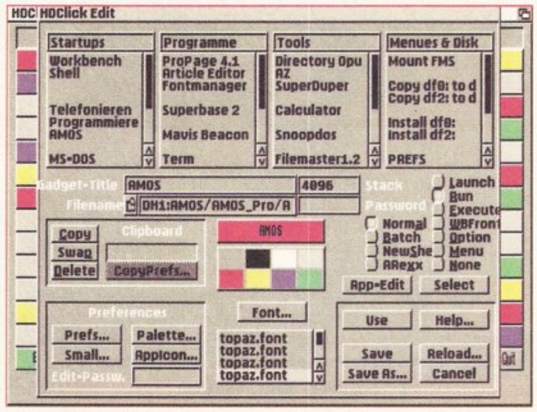
If you have a hard disk installed inside (or on the side) of your Amiga, then you'll already know just how confusing it can be trying to hunt through megabytes of files for your favourite word processor or paint program. *HDClick* is a useful utility that can be used as a frontend for your hard disk. It enables you to select your favourite programs and perform common hard disk operations without having to wade through masses of files and drawers. What's more, *HDClick* is fully configurable so you can set it up to suit your own system with ease.

Before you can use *HDClick*, you'll need to decompress its archive by following the instructions at the bottom of these pages. When *HDClick* is decompressed, it will create two directories containing the *HDClick* program and another containing an all-important file called **AskEnv**. In order to use *HDClick*, it needs to be installed on your hard disk – don't worry, this isn't as painful or involved as it sounds thanks to a little script called **INSTALL** that comes with the utility. Simply double click on the **Install** icon and *HDClick* will install itself onto the Boot partition on your hard disk.



Kingcon adds a whole range of new features to the Amiga's command line interface.

Once you've installed *HDClick*, you'll need to configure it to suit your own particular system. The author, Claude Muller, has installed *HDClick* with a demonstration configuration but it's very unlikely that you'll have the same programs as him installed on your hard drive so you'll need to start by removing all the entries that he has added. The easiest way to do this is to delete all the files in the directory **HDCConfigs**. When you run *HDClick*, it will inform you that no config files have been found and then ask you if you wish to create a new set of config files. Just select **OK** and a 'clean' version of *HDClick* will load. Once the *HDClick* screen appears, select the **Edit** gadget and you can start defining the *HDClick* buttons to run programs, AmigaDOS scripts and even ARexx scripts on your hard disk.



HDClick enables you to run all your fave applications from hard disk without having to hunt through drawers.

HDClick is quite a complex program so we strongly recommend that you read the included documentation files before diving into it. Also included is an *AmigaGuide* format file that can be loaded into the *MultiView* (*AmigaGuide*) utility bundled with your Amiga (this is only included with Workbench 2.1 or higher). This file is considerably better than the normal documentation files because it takes full advantage of *AmigaGuide*'s HyperText links.

CGFONTS

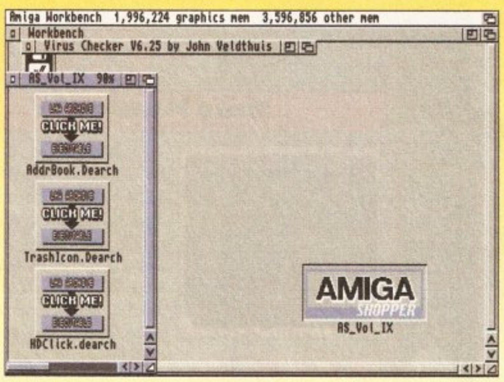
All Workbenches

With the release of programs such as *Professional Page*, *Wordworth 2* and even *Workbench 2.0*, AGFA/Compugraphic (CG) outline fonts have become standard on the

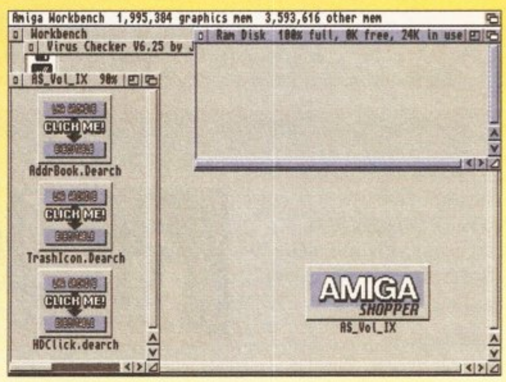
SO JUST HOW DO YOU GET AT ALL THIS

❶ First you should switch on and boot up your Amiga with Workbench. The programs on the disk have all been compressed, and must be de-compressed before they can be properly used. This process is pretty much automatic, so long as you follow the steps detailed here. Before you go any further you need to decide where you want to de-compress the cover disk files to. If you have plenty of RAM, you may want to use the RAM disk. Another option is to de-compress to your hard disk. Otherwise, you'll need to de-compress onto another floppy disk. If you choose this last option, then you'll need to have several blank floppies standing by. If you only have a single floppy drive, be prepared for lots of disk swapping. You can format floppies from the Workbench by single-clicking on their icon and then selecting the **Format Disk** or **Initialize** menu option (all depending on the particular version of Workbench you are using).

Now insert the copy that you've made of this month's cover disk. You'll see the ***Amiga Shopper*** icon appear on the screen.



❷ The next step is to double-click with the left-hand mouse button on the ***Amiga Shopper*** icon. A window for the disk will then open, in which will be displayed the four icons for the software on the disk this month. The programs are all stored as archives and can be accessed via the icons shown in the window. These files have names that are terminated with the characters "**.Dearch**".



❸ Let's say that you want to de-compress the *TrashIcon* package. You'll need to decide where you want the de-compressed material to be stored. If it's onto a floppy, then insert the disk and open its window. If you want to place the files on your hard disk or your RAM drive, then open their window instead. (Bear in mind that the contents of your RAM drive are lost when the power is switched off.)

VITAL: READ THIS FIRST

The first thing that you *must* do with your cover disk is to write-protect it. To do this, ensure that the movable plastic tab on the disk is in the open position – that is, you can see through the hole. This means nothing can now be written to the disk, especially viruses, which are the last thing you want.

The next important step is to make a back-up copy of the cover disk. The easiest way to do this is to open a Shell window and then type the following at the prompt:

```
diskcopy df0: to df0:
```

Your Amiga will now ask you to insert the **SOURCE** disk (that's the cover disk) in **df0:** and then press the **<Return>** key to continue.

Your computer will now read some data from the disk before another window appears asking for the DESTINATION disk (the empty disk that you want to make a copy on). You'll find that you need to swap disks like this several times.

If you have more than one floppy drive, you can copy from one drive to the other, like this:

```
diskcopy df0: to df1:
```

Right, now that you've made a copy of the cover disk, hide the original in a very safe place and work *only* with the duplicate.

CAN'T READ THE DISK?

We duplicate tens of thousands of disks, so inevitably a very small number will be corrupted. You'll know if this has happened to you because you'll get a message saying either it isn't a DOS disk or that a READ ERROR has occurred.

The solution is straightforward. Just send the faulty disk to the address below, enclosing a SAE for the return of your replacement disk and we'll pay the return postage. The address is:

***Amiga Shopper* 34**
PO Box 21
Daventry
NN11 5BU

A replacement disk should then come rattling through your letterbox within a short while.

Amiga. CG fonts (as opposed to the bitmapped fonts that Amiga users are more used to) can be shrunk and expanded to any point size with virtually no loss in quality. The *CGFonts* archive on this month's cover disk contains no less than four new outline fonts for your perusal – GothicShadow, HandWriting, HeadHunter and IglooLaser.

These can be used with just about any program that supports CG fonts including *Professional Page* and *Wordworth 2*. If you're lucky enough to own a Workbench 2.0-based Amiga then you can convert them to Workbench CG Fonts using the *Fountain* utility (*IntelliFont* on Workbench 3.0 models) bundled with your machine. Full instructions on the use of *Fountain* can be found in your Workbench guide. However, before you can access these fonts, you'll need to decompress the *CGFonts* archive using the technique detailed on the bottom of this and the previous page.

The four fonts don't have their own icons so you'll need to use AmigaDOS to install them for use with your applications.

KING CON

Workbench 2 and above

The Amiga's console handler has improved a great deal with the launch of Workbench 2.0 but it still leaves a great deal to be desired when compared to more modern command lines.

This is where *KingCon* comes in (great name, eh!). *KingCon* is a replacement for the standard AmigaDOS **CON:** device that adds a whole host of handy new features to the Amiga's command line interface (Shell). Here's a brief rundown of what *KingCon* has to offer.

Filename Completion – a filename that is 30 or more characters long certainly helps to clarify its contents, but it can be a real pain having to re-type it over and over again every time you want to manipulate it from the Shell. *KingCon* takes out the hassle with this powerful filename completion feature.

All you have to do is type the first few characters of a filename, press the **TAB** key and it will search through the current directory for a match. If it finds one, it will complete the filename. In the event of it finding more than one match, it will list the found files in a requester display.

All you have to do is to click on the one you want and *KingCon* will automatically insert it into the command line.

Review Buffer – what do you do if you want to redisplay the output from an AmigaDOS command or program? You use *KingCon's* review buffer, that's what! *KingCon* automatically attaches a scroll bar to the lefthand side of any AmigaDOS Shell windows that you open. Whenever you want to view the text that has scrolled past the top of the Shell window, just scroll it up and the contents will be redisplayed.

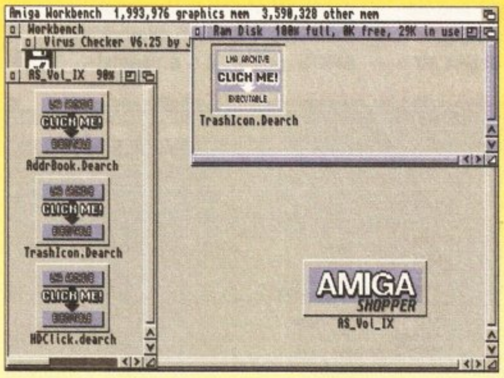
Intuition Menus – with this facility, the Amiga's Shell finally meets Intuition. *Kingcon's* Intuition menus provide quick and easy access to the utility's features without you having to remember the program's various key combinations (hot keys).

In order to use *Kingcon*, you'll have to decompress the *Kingcon* archive on this month's cover disk using the technique detailed below. Once *Kingcon* has been decompressed, you should find two drawers labelled **Handler** and **Docs** and a program called *Installation*. To install *Kingcon* on your Workbench disk or hard disk, double click on the *Installation* program and follow the on-screen prompts. To use Kingcon, you'll need to add the following lines to your 'StartUp- Sequence' file:

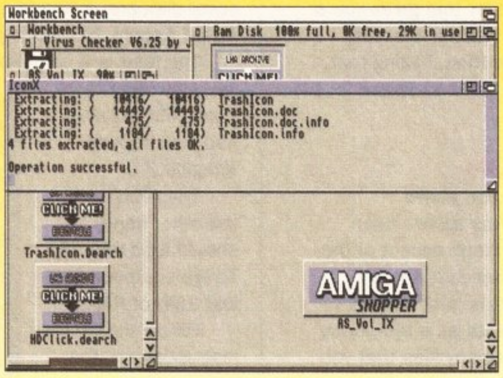
```
Assign CON: Dismount
Assign KCON: As CON: From ☛
DEVS:KingCon-Mountlist
```

After this, you're ready to start using *Kingcon*. Reset your Amiga and reboot using the Workbench disk that you installed *Kingcon* on to. When Workbench appears, enter Shell and *Kingcon* should be loaded.

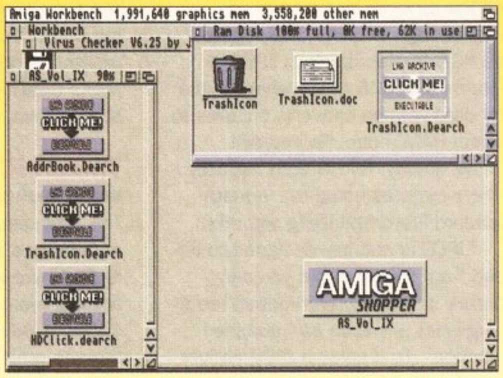
LOVELY SOFTWARE ON YOUR DISK?



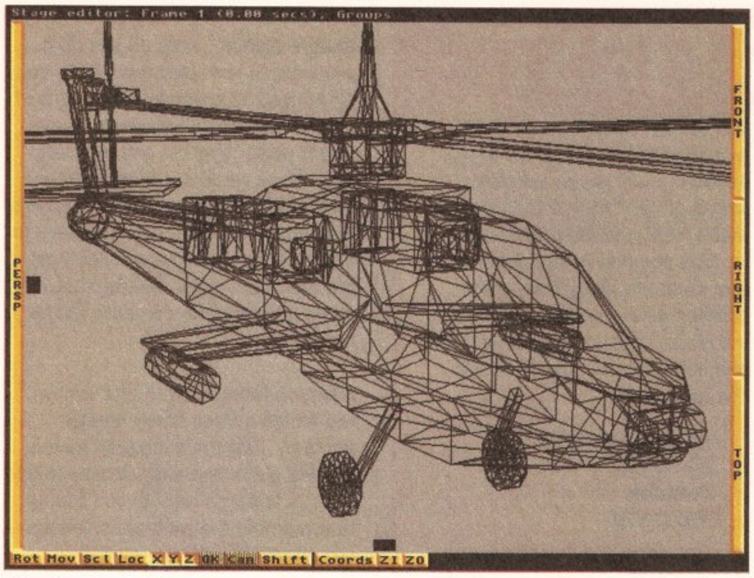
❹ Drag the icon (say **TrashIcon.Dearch**) into the destination window. (Drag an icon by putting the mouse pointer over it and keeping the left mouse-button pressed. Release the button when you've placed the icon where you want it.) Now double-click on it. The de-compressing procedure will automatically begin, and another window called **IconX** appears on-screen to tell you how it's going.



❺ In the **IconX** window will be listed all the files as they are extracted from the archive. If you are using an Amiga with only one disk drive then unfortunately you'll have to get involved with a fair bit of disk swapping. A **System Requester** window will appear each time you need to swap disks – simply put whichever disk is requested in the Amiga's drive. (Keep the source disk write-protected to be safe.)



❻ Once the **IconX** window has vanished, the source window will still appear to contain only the **TrashIcon.Dearch** icon – that's because the window isn't automatically updated. Click first on the window's close gadget and then open the window again. It will reopen with the packages' icons displayed in their full glory. You can then run the programs or load the files as normal.



The Apache helicopter gunship in all it's Imagine-created glory.

FAST JPEG

All Workbenches

The JPEG (Joint Photographic Exeperts Group) picture file format is becoming a standard on the Amiga thanks to its ability to compress picture files to a fraction of their original size. Unless you're lucky enough to own an image processing program such as ASDG's *Art Department Professional* that can handle JPEG files, JPEG pictures are about as useable as a hairdryer in a hurricane, but with *Fast JPEG* (also known as *FJPEG*), you can access JPEG picture files without having to spend a fortune on a dedicated image processing program.

In order to use *Fast JPEG*, you'll need to start by decompressing its archive by following the instructions detailed on the previous pages. When you decompress the archive, four files should be produced – two versions of the *FJPEG* program, a documentation file and a demonstration JPEG file for you to experiment with. Of the two *FJPEG* versions, one is for standard Amigas and the other is for those of you lucky enough to own AGA Amigas. The AGA version displays JPEG pictures in HAM8 mode whereas the standard version converts pictures to normal HAM mode. To improve picture quality, FJPEG automatically dithers pictures using the industry standard Floyd-Steinberg algorithm.

FJPEG is actually designed to be used from the Shell but you can operate it from the Workbench too by using what is known as 'multiple selection'. To display a JPEG picture from the Workbench, click once on the FJPEG icon and double click on the JPEG file you want whilst holding down the **SHIFT** key. *FJPEG* can't save pictures in IFF format, however, so you'll have to use a PD screen-grabbing utility such as *QuickGrab* to to convert the JPEG picture into an IFF file format.

MAGIC MENUS

Workbench 2 and above

This is a handy little commodity designed specifically for the lazier Amiga user. It adds what PC owners call 'pop up menus' to the Amiga's Intuition environment so that instead of tying all your pull down menus to the menu bar at the top of every Intuition screen, it displays them at the current mouse position whenever the right mouse button is held down. This leaves you free to access menu options and submenus without having to move the mouse pointer up to the menu bar!

Magic Menus will only run on Amigas equipped with Workbench 2.0 or Workbench 3.0. Before you can use it, you'll have to decompress the Magic Menu archive by following the instructions at the bottom of the page. Running *Magic Menus* is simple – either double click on the *Magic Menus* icon or, better still, transfer it to the **WBStartUp** drawer on your Workbench. If you've got the *Commodities Exchange* program loaded, you can also access *Magic Menu's* requester that gives you a fair amount of control over the program's operation. Failing that, press **Control**, **Alt** and **Space** for the same effect.

TRASH ICON

Workbench 2 and above

The trashcan has always been regarded as a weak aspect of the Amiga's Workbench.It's really nothing more than just another drawer which acts as a temporary storage area for any files that you wish to 'trash'. The trashcan is automatically installed onto all newly formatted disks whereas, on other WIMP (Windows Icons Menus and Pointer) based computers, it lives on the desktop (the Workbench screen) so that when files are placed over the trashcan icon, they are automatically deleted.

When files are placed into the Amiga trashcan on a disk, it's still down to you to open up its drawer and manually delete all the files.If you simply leave the contents of the trashcan alone, they'll remain on your disk taking up valuable space.

In the **TRASHICON** archive you'll find a very handy utility for all Amigas based around Workbench 2 and above that attempts to solve the problem by providing a more effective trashcan for you.

Once *Trash Icon* has been decompressed, you'll find two files – the *Trash Icon* program and a documentation file. If you can't wait to see *Trash Icon* in action, simply double click on its icon and an icon (which looks amazingly like the trashcan that Workbench places onto your disks) will appear on the Workbench screen.

If you double click on this icon, a requester will appear giving you complete control over how *Trash Icon* operates – it's worth turning on the 'Confirm Deletion' option just in case you accidentally try to delete a file that you really want!

If you like the look of *Trash Icon*, then the next thing to do is to install it on your Workbench disk.

Don't worry, there's no complicated startup sequences to mess around with – just drag the *Trash Icon* icon into your **WBStartUp** drawer and *Trash Icon* will automatically be loaded each time you boot up your Workbench disk.

IMAGINE OBJECTS

All Workbenches

If you were one of the thousands of people that bought issue 53 of our sister magazine, *Amiga Format*, we've got a real treat for you: two objects for use with the *Imagine 2.0* ray-tracing program that was included on *AF's* cover disk (back issues are still available!).

The two objects included on our cover disk are: a Bengal tiger and an AH-64 Apache helicopter gunship.

The tiger is a complex object so you may need more than 1Mb to load it into your copy of *Imagine 2.0*.

The AH-64, on the other hand, should load into any Amiga equipped with just 1Mb of RAM.

Follow the instructions at the bottom of the previous two pages in order to decompress the **IMOBJECTS archive**. To load them into *Imagine 2.0*, select the **Detail Editor** and then select **Load** from the **Object menu**. When the file requester appears, select the object you wish to load followed by clicking the **OK** gadget.

ADDRESS BOOK

All Workbenches

This archive contains the latest version of Toby Simpson's Address Book program that we've been covering in our 'Sailing through C' column. Before you can access it, you'll need to decompress the archive using the technique detailed on the previous two pages.

Then you'll find all the source code, includes and header files required to compile the address book program yourself. It's worth noting that, in order to display any of the source code, you'll need to load them into a text editor such as *DME* – the files have no corresponding icons. To do this you'll first of all need to open a Shell.

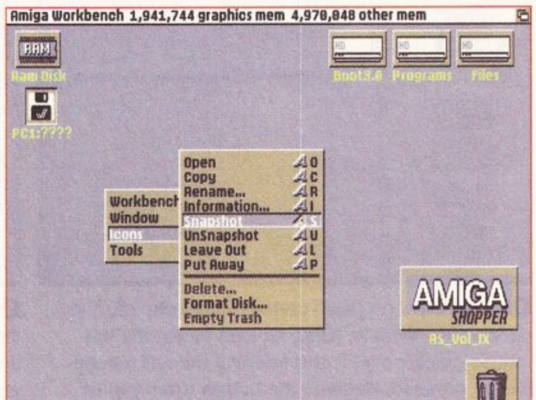
If you'd like to play with Toby's address book program without compiling it first, just change into the directory where you've dearchived it and type the name of the pre-compiled version – **address.x**.

ASPAINT

All Workbenches

If you've been following Jason Holborn's AMOS paint program tutorial over the past few months or so then you'll want to get your hands on this latest version of *ASPaint*. You can do this by decompressing the contents of the ***ASPaint* archive**. This latest version of *ASPaint* adds a powerful palette editor.

You can load *ASPaint* into your copy of AMOS by booting up AMOS and selecting the **Load** option. When the AMOS file requester appears, select **ASPAINT.AMOS** and it will be loaded into the AMOS editor. You can then run it simply by pressing the **F1** key or by selecting the **Run** option. *ASPaint* may not whip the pants off of either *DPaint* or *Brilliance* but as an example of AMOS' power, it's a beauty! AS



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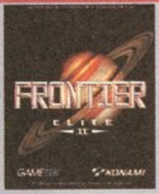
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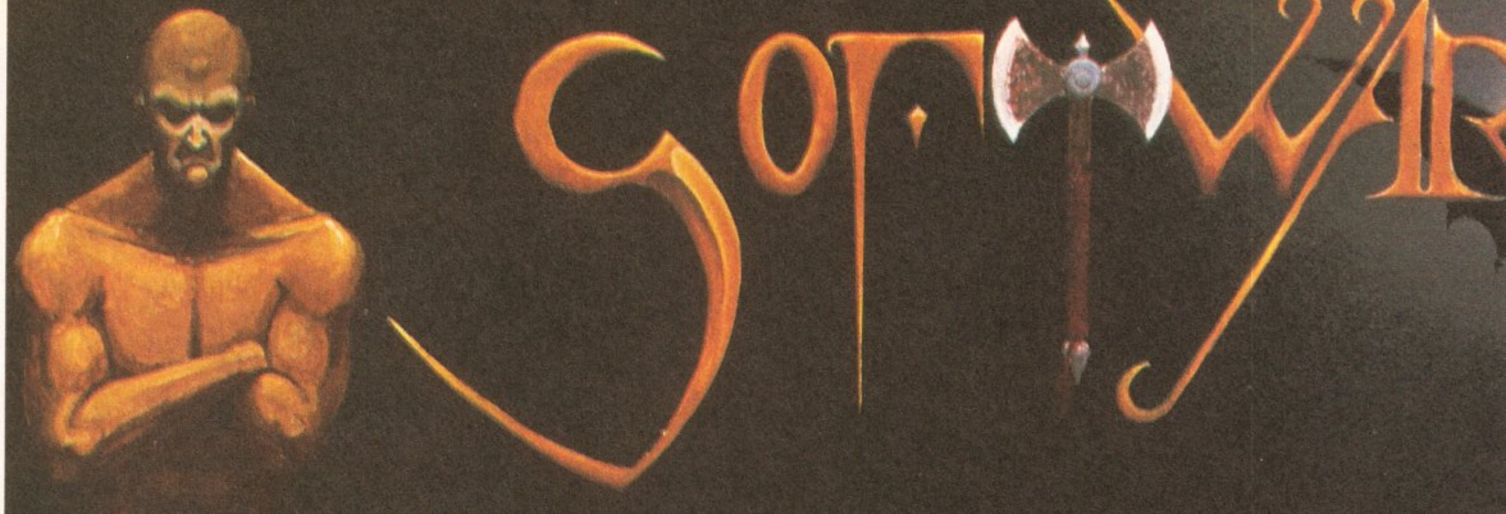
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Right, let's get one thing straight from the start. The Amiga is not a games machine. Absolutely not. Nor is it just a 'home' computer. It is actually one of the most flexible and powerful computers you can buy. The Amiga can do pretty much anything you want it to do – and to a very high standard.

As an Amiga user you are in good company. The Amiga is used widely in the video industry. Foundation Imaging used the Amiga to create the special effects for Warner Bros' Emmy award winning *Babylon 5* movie and TV series. Amblin Imaging used the Amiga to create the *SeaQuest* DSV underwater craft special effects for Universal Studios as well as the previsualisation presentations of *Jurassic Park*. Remember *Max Headroom*? That made extensive use of the Am-mi-mi-mi-ga too. If you watch *Quantum Leap* on BBC2, you will have seen stunning morphing effects created on the Amiga... the list goes on.

Of course, such effects require more than one Amiga working in isolation. Extra software and hardware is needed. To use that software and hardware effectively, a fundamental knowledge of how the Amiga operates is essential. If you've read the manual that came with your Amiga (and I am assuming you have!), you will have seen that there is a lot to take in. The manual is primarily concerned with guiding you around Workbench, the Amiga's graphical user interface (GUI). In the next 10 pages we're going to look at Workbench more closely to discover some of the things that the manual doesn't tell you.

We will be looking at the most important Amiga concepts which all newcomers to the serious side of Amiga computing should be aware of. There's nothing worse than that feeling of frustration when something won't work and you can't figure out the reason. But fear not, we are going to lay the foundations upon which you will build your knowledge of the system and take those vital first steps towards becoming an Amiga expert.

One important concept you should understand fully from the outset is paths, and how they are written down. You know that programs come on disks. You know that those disks will have drawers (also known as directories), inside which might be more drawers. Somewhere inside one of those drawers will be the file you are looking for. We refer to that file by describing the path to it from the disk, through the drawers, eventually to the file itself. So **Disk:Drawer/File** would be an example of a full path and filename. Notice that the disk name has a colon (:) after it and that the filename is separated from the drawer name by a slash (/). If the file was inside a drawer that was itself inside a drawer, then the two drawers would be also be separated by a slash – **Disk:Drawer/Subdrawer/File**.

Often, for the sake of clarity, the disk name is omitted from the path and written out instead. You might, for instance, be told to look in the **Devs/Printers** drawer on the Workbench disk – in other words, the drawer called **Printers** that is inside the drawer called **Devs** on the Workbench disk.

Confusion can arise because pull-down menus and the items in those menus are often written down in the same way as paths and filenames. The **All** item of the **Snapshot** submenu of the **Window** menu in the Workbench title bar (which is a bit of a mouthful, you'll agree) is more incisively referred to as the **Window/Snapshot/All** item of the Workbench menu. You can tell the difference between the two when reading because you will normally be asked to "run" Drawer/File and "select" Menu/Item. So if you are asked to run something you should normally be looking for it on a disk; if you are asked to select something you should find it in a menu.

Paths are a very important Amiga concept. Understanding how they are written and what they mean is essential to users. The stumbling block for beginners is the jargon word, "device", so this is where we will start.

THE DOUBLE-DOT DEVICE

The floppy disk drive built into your Amiga is an example of a device. Amiga devices are given names. The built-in floppy drive is named **DF0:**, which stands for Drive Floppy Zero. (It is numbered zero because in the madcap world of computing, people count from zero rather than one.) You can tell a device name because it is always followed by a colon (:), which some people call a "double-dot".

Three of the ports at the rear of your Amiga are for plugging physical devices into. The parallel port, named **PAR**, is for printers, scanners digitisers and other devices. The serial port, named **SER**, is mainly used for modems although there are a few other devices that use it. The external disk drive port is named either **DF1:** or **DF2:** depending on which Amiga you own and it can have more than just external disk drives plugged into it.

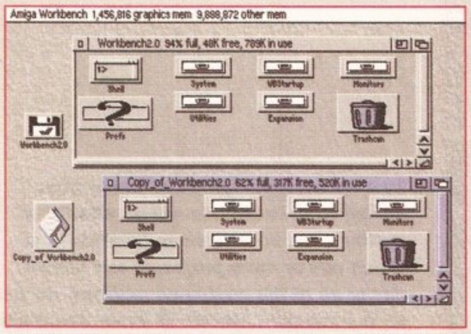
Forget the mechanism itself for a moment, and instead think of the Amiga device as simply a source or a destination for data. Whenever the Amiga accesses a device, it is either reading from it (for example, loading a program from disk) or writing to it, (sending something to the printer, for instance)

All of this is easy enough to understand. What muddies the waters is the "logical device name". If you think of physical device names as being names that refer to equipment that you can see and touch – hardware in other words – then logical device names are the opposite, that is names that identify things that only exist in the



The Assign command enables you to teach the system in one word the route to a particular place on your disk by describing the path to that place. In our example, "Cathedral:" would be a shorter way of saying "England:SouthEast/London/Cathedral". Many applications, including Workbench, set up and use these logical device names so that they can always be sure of where to look for their own system files.

MAKING ROOM IN WORKBENCH 2.0



Delete files from a copy of Workbench 2.04 or 2.05 disk and make about 300K of free disk space, enough to install a program or two.

The Workbench 2.0 disk (Workbench 2.04 and 2.05, that is, not Workbench 2.1) was the last Workbench disk that could safely have files deleted from it without the user having to worry too much about the consequences. By removing most of the files that are not absolutely necessary, it is possible to make just over 300K of free space, which is enough to install a program or two on to it, enabling you to create customised boot disks for specific applications.

To install an application on to your customised boot disk you can either use the installation program supplied with the application, or follow the instructions in the application's manual. Many PD and shareware programs can be installed by simply dragging their drawer or program icons on to the disk icon of your boot disk. Normally, there will be instructions in a Readme file if there are any special installation procedures, and this applies to commercial applications as well as PD and shareware.

At the end of this text is a list of files that you can safely delete. I know it's obvious, but I have to say it: *do not delete these files from the original Workbench 2.0 disk that came with the computer.* Make half a dozen backups of this original Workbench disk, and put them somewhere safe. Then delete as many of these files as is necessary to make room on (another backup copy of) Workbench for whatever it is you want to install.

If just over 300K still isn't enough room to install your application, then you should boot from a full Workbench disk and run your application from a separate disk by double-clicking its icon. It is possible that the application may need to add some "system" files to Workbench, in which case you can make room for them by again deleting any or all of the files in my list.

If you want to learn what these files do and why they can be deleted, buy a book on AmigaDOS and look them up, but there are a few important details that you should be aware of.

Firstly, not all the files have icons, so to delete them you will need to select the **All Files** item from the **Show** submenu of the **Windows** menu after opening the Workbench window, which makes all the hidden drawers and files appear.

Secondly, if you have anything plugged into your serial port, do not delete the **Devs/serial.device** and **Prefs/Serial** files.

Thirdly, included in my list are the files that enable the Amiga to synthesise speech. This feature is fun for five minutes but soon grates on the ear. The files in question are **Devs/narrator.device**, **L/speak-handler**, **Libs/translator.library** and **Utilities/Say**. The **SPEAK:** logical device is mounted in your startup-sequence and depends on these files. If you delete them, the attempt to mount **SPEAK:** will fail. You have two choices: either don't delete these files, or edit the **S/Startup-Sequence** file and put a semi-colon (;) before the **Mount SPEAK:** line to make it inactive. If at this stage you are unsure of how to edit the **S/Startup-Sequence**, leave the speech synthesis files where they are until you have learnt more about your Amiga.

Lastly, my list removes the *ARexx* application. You can tell which files these are because they will have the word "**rexx**" somewhere in their filename or drawer name. Take particular note of the **Rexxc** drawer. You may delete all the files that are in this drawer (the **Rexxc/#?** in the list means "all files in the **Rexxc** drawer"), but do not delete the drawer itself because it is added to your path list in the **S/Startup-Sequence** file. If you are confident enough, remove the **SYS:Rexxc** bit from the list following the **Path** command, after which you may delete the **Rexxc** drawer – otherwise just leave an empty **Rexxc** drawer on the disk so that the **Path** command will not fail.

Now, this is a lot of fluffing about, which is why many companies provide their software on so-called bootable disks. Alas, most of these bootable disks contain a mixture of old and new system files, and all of them will have been forced to delete even more files than are in my list, which is one of the main reasons a given application will work fine on one person's Amiga and will crash on someone else's. The difference will be that one is booting from a proper (or better) Workbench, the other is booting from a cut-down and slipshod Workbench. That's the beauty of a hard drive, you can always be sure that the full Workbench is correct and present. Well, almost always, but that's another story.

```
disk.info
C/Break
C/ChangeTaskPri
C/CPU
C/Date
C/DiskChange
C/DiskDoctor
C/Edit
C/Eval
C/Filenote
C/Lock
C/MakeLink
C/MagTape
C/Protect
C/Search
C/SetClock
C/SetDate
C/SetFont
C/Sort
C/Status
C/Type
C/Which
Devs/narrator.device
Devs/serial.device
Devs/Printers/generic
L/speak-handler
Libs/rexxsupport.library
Libs/rexxsyslib.library
Libs/translator.library
Prefs/Serial
Prefs/Time
Rexxc/#?
S/BRUTab
S/HDBackup.config
S/DPat
S/SPat
S/PCD
S/Startup-sequence.HD
System/NoFastMem
System/RexxMast
Utilities/Clock
Utilities/Say
Utilities/Exchange
```

computer's memory after it has been switched on. But, just like physical devices, logical devices are only ever sources or destinations for data.

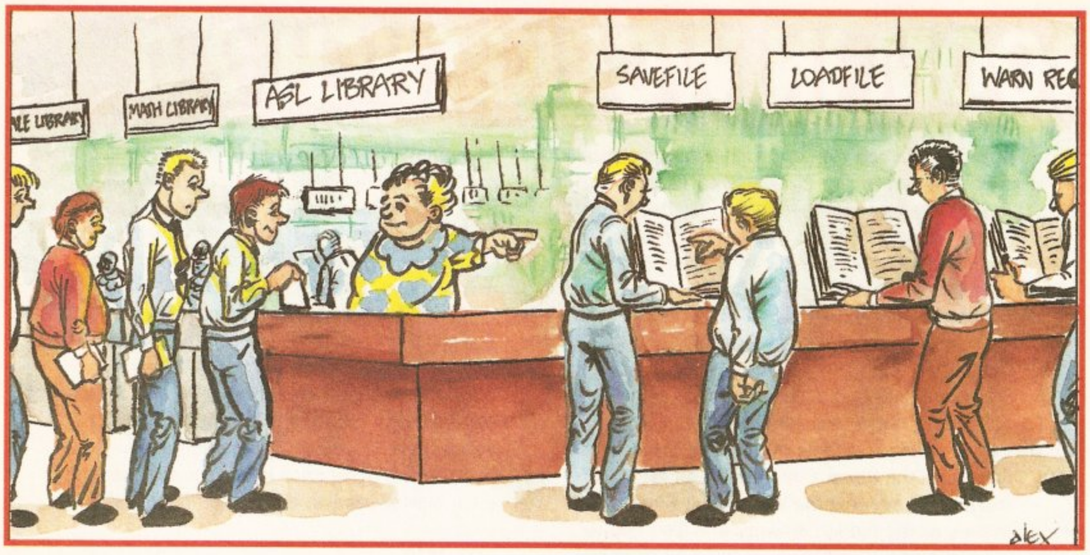
An example of a logical device is **SYS:**, which, upon switching on the Amiga, is automatically designated to be the main directory of your boot disk. Your boot disk – sometimes referred to as your system or startup disk – is the floppy disk (normally Workbench) you insert after switching on the Amiga. Or, if you own a hard disk (also known as a hard drive), it is the part of that hard disk from which the system files were loaded. The main directory – or the root directory to give it its proper name – is the first directory you see when you open a disk icon.

The term **SYS:Prefs**, for example, refers to the drawer named **Prefs** on the disk from which you booted, not any other drawer named **Prefs** on any other disk.

Various other logical devices are set-up or "assigned" automatically by the Amiga. Among these are the **C:** logical device, which will be the **C** directory on your boot disk (**SYS:C**), **S:** will be the **SYS:S** directory, **DEVS:** is **SYS:Devs**, **LIBS:** is **SYS:Libs**.

From this, can you see that **C:** and **SYS:C** mean the same thing, but **C:** and **SYS:C** do not necessarily mean **DF0:C** because the disk currently in the built-in floppy disk drive (**DF0:**) might not be the disk from which you booted. In a nutshell, **DF0:** is the actual physical slot into which you put the boot disk, **SYS:** is the boot disk itself. If you were to take the boot disk out of **DF0:** and insert it into **DF1:**, the Amiga will still know that disk as **SYS:**, even though it is now in a different disk drive.

To the beginner, volume names appear to be the same as logical device names and are consequently a cause of early confusion. There is a subtle difference. A volume name is the actual name of the disk – the name that appears underneath a disk's icon on the Workbench. The difference is that, while you may rename a disk so that its volume name has changed, its logical device name (if it has one) will remain the same. For example, if you booted from the **Workbench3.0** disk and then renamed it as **MrBlobby**, that disk would still be the **SYS:** logical device, thus enabling the Amiga, or any program that is running, to always be able to find the files it requires in order to operate correctly, even if some maniac has dashed on to the pitch and moved the goalposts. Any program looking specifically for **Workbench3.0:Prefs** would fail to find that directory because the disk that was named **Workbench3.0** is now named **MrBlobby**. Any program looking for **SYS:Prefs**, on the other hand, would still find the correct **Prefs** directory



To save every Amiga programmer from having to re-invent the wheel, often-used routines can be written as libraries from which one or more programs can borrow any or all of the contained routines. As well as the standard system libraries, there are some important PD and shareware ones like ARP and ReqTools that have made their authors famous worldwide.

on the **MrBlobby** disk because changing its name from **Workbench3.0** to **MrBlobby** would not change the fact that the Amiga knows that disk under the logical device name **SYS:**. The Amiga would "see" that the goalposts had been moved and would reposition the goalkeeper accordingly.

So far, so good. But what if you took **MrBlobby** to another Amiga, renamed it back to **Workbench3.0** and then put it back in your Amiga? Well, that wouldn't work because your Amiga will have no record of the name change and would therefore still be looking for a disk named **MrBlobby** whenever anything tried to access the **SYS:** logical device. You moved the goalposts without the Amiga "seeing". **SYS:** would need to be "reassigned" to the **Workbench3.0** volume name. This would happen automatically if you rebooted with that disk. Alternatively, you could use the **Assign** command.

ASSIGN FROM ABOVE

Assign is the command that sets up and controls which logical device names are designated to which paths. Just as the system automatically assigns **SYS:** to be the root directory of the boot disk, **C:** to be **SYS:C**, **S:** to be **SYS:S** and so on, so the **Assign** command enables any directory on any disk to be assigned a logical device name.

Assign is a command that is typed into a Shell window rather than run from the Workbench by double-clicking an icon. To save opening a Shell window, you can select the **Execute Command** item from the Workbench menu and type the command into the requester that pops up. First comes the command (**Assign**) followed by a space and then the logical device name. This can be any name you like but it must end in a colon. Then comes another space followed by the path to which the logical device name refers. You

THE TROUBLE WITH WORKBENCH 3

Commodore gave you five disks with your A1200. Only one of them is labelled **Workbench**, but the operating system has grown so large that what used to fit onto one disk in the old 1.3 days now requires two more disks – **Extras** and **Fonts**. There are many important files on these disks and if you are using your 1200 with floppy drives, there is no easy way to properly operate it.

You should be aware that the **Workbench** disk has less than 100K of free space on it. On this disk you'll notice a drawer called **Prefs**. Inside it is another drawer called **Presets**, but none of the preferences editors themselves are in the **Prefs** drawer. These 15 programs, and their icons, consume almost 260K of disk space in the **Prefs** drawer on the **Extras** disk. Not to worry, you can leave them there and run them from the **Extras** disk, but when you select the **Save** option from any of these programs they will want to store your preferences settings on the **Workbench** disk in the **ENVARC:Sys** drawer.

Calm down, don't let terms like **ENVARC:** spook you. When you switch on the 1200, the **ENVARC:** logical device is automatically set to be the **Prefs/Env-Archive** drawer on the disk from which you are booting. See the main article for an explanation of exactly what a logical device is.

If your boot disk does not contain a drawer called **Sys** inside the **Prefs/Env-Archive** (**ENVARC:**) drawer, the **Save** functions of all the preferences editors will fail. You'll get an "object not found" error message. The "object" that the preferences editor can't find will be the **Prefs** drawer, the **Env-Archive** drawer inside **Prefs**, or the **Sys** drawer inside **Prefs/Env-Archive.** A standard Workbench 3 disk contains these drawers, one inside the other, and on booting the 1200, **ENVARC:Sys** is where the system will look for your preferences settings; if it can't find them you'll have to put up with the built-in defaults.

Now, the 100K of free space on the Workbench 3.0 disk is enough to store these settings. But many applications that are provided on so-called bootable disks do not have room. Most won't even have a **Prefs** drawer. For this reason, the only sensible way to run your 1200 from floppy is to always boot from (a backup copy of) your Workbench disk. If you don't boot from Workbench, anything may or may not happen. When things don't work it will almost always be because you are not running a full and proper operating system. So boot from Workbench and run your application by inserting its disk into a drive and double-clicking its icon. If an application insists on you booting from its disk, not Workbench, then it will be a badly written application and you should prepare for trouble.

Font trouble, for example. The Workbench 3 disk doesn't have a **Fonts** drawer. All your fonts are on the **Fonts** disk. If you are booting from floppy, whenever any program wants any font other than the built in **topaz8** one, it should ask for the **Fonts** disk. But if you've booted from a disk other than the Workbench 3 disk, who knows what will happen? It depends entirely on the application that is asking for the font, and the structure of the disk from which you booted.

At this point, single floppy drive users may be wondering how on earth they are supposed to run their 1200s properly. The blunt truth is that you can't. It is difficult and cumbersome enough with two floppy drives, with just the one floppy drive it is nigh-on impossible.

The Workbench 3.0 manual assumes from page 1 of Chapter 1 that you have a hard drive. Very little of the advice and documentation in that manual caters for floppy disk users. This is a very large hint from Commodore that, even though they don't specifically say so, a hard drive is required to use the 1200 properly. With a hard drive, the system is booting from a big disk that has plenty of room on it for all the system files, and those files will be in all the places the system will expect to find them. Without a hard drive, the Workbench 3 system struggles to cope.

With older versions of Workbench it is possible to delete some of the less important system files (see the Workbench 2.0 panel) to make room for an application. But not with Workbench 3. It's a big, powerful operating system that depends on most of the files spread across not only the three disks mentioned above, but also the **Locale** and **Storage** disks. If you intend to do anything with your A1200, even if it is "just a bit of word processing", do yourself a favour and buy a hard drive, it will be the best money you will ever spend.

And dads, don't let me hear any more of this "It isn't worth buying a hard drive, it's only for the kids" rubbish – without one the kids might go back to thinking that the Amiga is just something you zap aliens with.

WHAT ABOUT WORKBENCH 2.1?

To all intents and purposes, Workbench 2.1 is Workbench 3.0 without the AGA bits. And like Workbench 3.0 (see the Workbench 3 panel), operating Workbench 2.1 from floppy disk is nigh on impossible. If you are struggling with floppies and Workbench 2.1, you would be better advised to go back to using Workbench 2.04 or 2.05 until such time as you can afford a hard disk.

finish by pressing the Return key. Try this simple example:

```
ASSIGN T: RAM:T
```

This assigns the logical device name **T:** to the **T** directory in the RAM disk. This particular assign is actually part of the normal Amiga startup procedure (**T:** is a device that many programs will use to store temporary files) but it does no harm to issue the command again.

Many applications these days will automatically add one or more **Assign** commands to your boot procedure upon installation. These enable the application to remember exactly where you installed it. For example, you may have installed an application called **WonderFile** on your hard drive in the **Work: Databases/WonderFile** directory, and the installation program may have added a line of instructions to your boot procedure that reads **Assign WFILE: Work:Databases/ WonderFile**, thus creating a new logical device name, **WFILE:**. Accessing the **WFILE:** logical device is now exactly the same thing as accessing the **Work:Databases/ WonderFile** directory.

This all works well until the day you decide to move the **WonderFile** drawer to another location on your hard disk. Although you have moved the drawer, the **Assign** command in the boot procedure is still "pointing" at the old location (or following the old path if you like). Much grinding of teeth ensues as the beginner gets hot under the collar and totally fed up with "Object not found" and "Insert volume so-and-so" error requesters. This most common of problems normally occurs because we have a pathological mistrust of automatic installation programs, so we install software in a temporary location – in the RAM disk for example, "just in case it formats my hard disk", which it won't, of course.

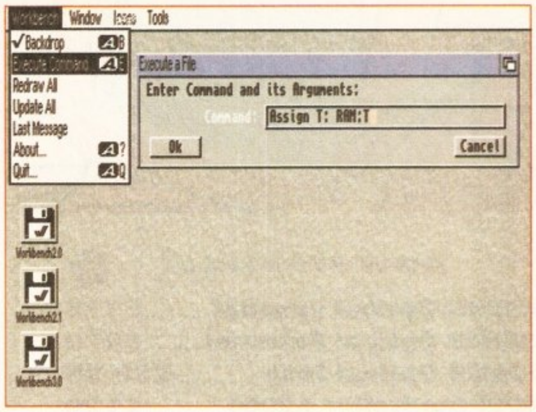
After installing it, running it and finding that it works, many people will just drag the program drawer from the RAM disk (or from wherever it was temporarily installed) to its permanent location on the hard disk, totally forgetting that the **Assign** command in the boot procedure is still pointing at where the software was initially installed. It is important to remember that computers don't make mistakes, but their operators (that's you and I) do.

Most software designed to be run from a floppy disk will use the volume name (the disk name) to identify the program disk rather than a logical device name. However that software may well set up logical device names for directories on that program disk, particularly if you are instructed to boot from its program disk rather than the Workbench disk.

Thankfully, most of this assigning stuff is invisible to the end user (that's you) but, now you know what is going on, you stand a fighting chance of being able to deal with any problems that crop up.

Okay, I know you've paid out lots of money and that problems shouldn't crop up but this is computer software you are using, not a ballpoint pen.

DIGGING DEEPER



There is no need to open a Shell to type in AmigaDOS commands. Instead you can use the Execute Command option from the Workbench menu – it is much quicker to get at.

Anyway, let's get off this path now and dig a bit deeper into the Workbench disk. Open the Workbench disk window and you'll see six, seven or eight icons depending on which version of Workbench you are using. Click once in the disk window to make sure it is the active window, then select **Window/ Show/All Files** from the Workbench menu. Some more drawers will appear, and they don't all fit in the window, so make the window a bit bigger and select **Window/Cleanup** from the Workbench menu. If you're not familiar all this opening and re-sizing windows stuff, now would be a good time to go and read the Basic Operations chapter of your Workbench manual.

The directories we discussed above, and a few more, are now visible. The **C** directory is where system commands (like **Assign**) are stored. Open that drawer if you are curious. There are quite a few files in there so you may have to wait a while for all the icons to appear, and then re-size and cleanup the window. Normally you would leave this directory just as it is, neither adding nor deleting any files. If you want to add your own commands (such as PD/shareware ones) they are better placed in the **Tools** or **Utilities** drawer so that you don't get confused about which are standard system commands and which aren't.

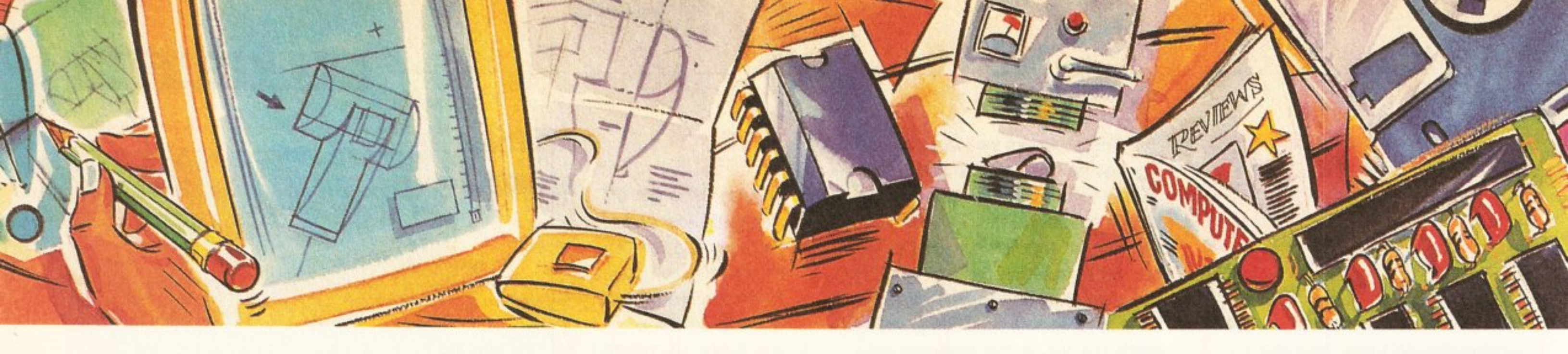
The commands in C are designed to be run from the command line, not by double-clicking icons – to be run from a Shell, that is, or from the **Workbench/Execute Command** requester. At this stage you needn't concern yourself with what they all do, I promise that you are not missing out on much, most of those commands are there for applications to make use of. When you feel ready for further exploration, treat yourself to a book on AmigaDOS.

The **Libs** directory is of supreme importance. It contains a few files that are a type of program known as a shared library. All Amiga applications (and even plenty of games, though they don't like to admit it) will stroll into these libraries and "borrow" any or all of the routines contained within them. They save programmers from re-inventing the wheel. If a few applications are running at the same time and all of them want to make use of the same library, no problem – the Amiga will open the library doors for the first program that asks to come in, and then any old program can wander in and ask to borrow the routines in that library. If more than one application wants to borrow the same routine, no problem, the Amiga makes them share it. If an application leaves a library and tries to lock the doors behind it, the Amiga will jam the doors open until

continued on page 20

If AmigaDOS had to do every job asked of it itself, the Amiga would not be able to mutlitask, at least not very quickly. So jobs are immediately delegated as they come in. The happy helpers known as device drivers carry out all the tasks to do with running physical devices like printers and monitors, as well as software devices like CrossDos and DataTypes.





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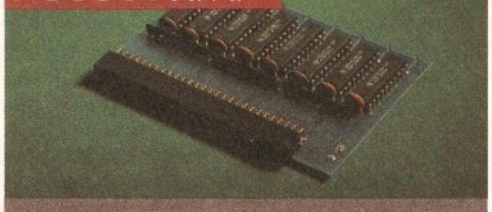
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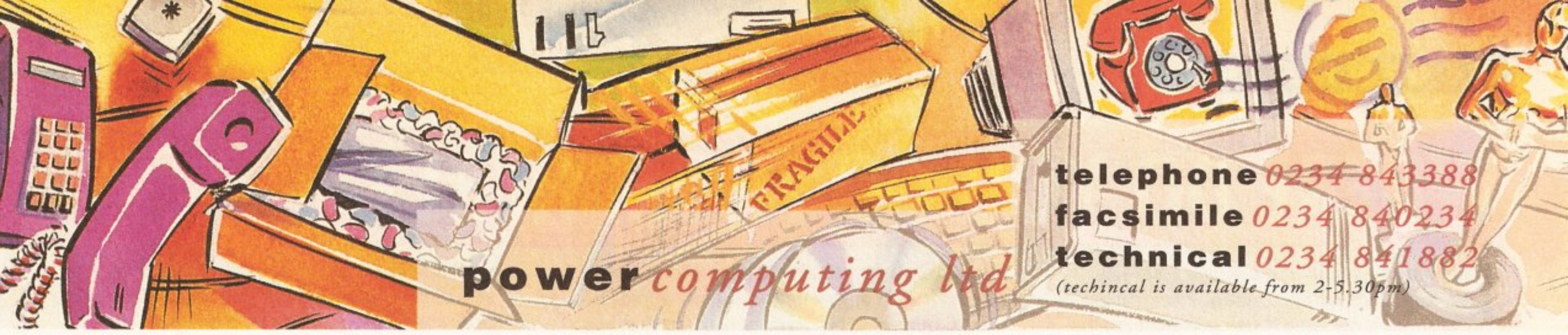
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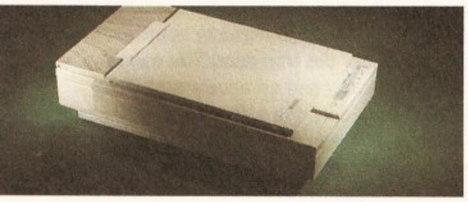
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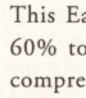
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WHERE DO YOU GO FROM HERE?

If you are going to use your Amiga creatively, let's get a few things straight. Firstly, if you bought an A600 recently because it was going cheap, the reason it was going cheap was because you are severely restricted as to how far you can expand it. Fitting a fairly large hard drive is not a problem — the interface for that is already inside the machine. The major restriction is memory. You can add 1Mb underneath in the trap-door, and up to 4Mb in the PCMCIA slot on a so-called smart card. That gives you 6Mb in total, which is quite a lot and plenty for most purposes, but that is as far as you can go. If you fit this maximum amount of memory and you still get "not enough memory" messages, it will be time to buy a new Amiga.

Next, the A1200. You might be upset about the fact but, despite the bundled applications software, the A1200 as it comes in the box is still just a games machine. If you want to use it creatively you need a hard drive and at least another 4Mb of memory. If you can afford 8Mb, go for it, otherwise buy a memory board that has 4Mb of chips on it and room for another 4Mb of chips when you can afford to buy them. Trust me, you will need all this memory, particularly if you are using any software that takes advantage of the AGA 256-colour screen modes. You can buy boards that have a 'maths coprocessor' on them. This little widget will make your Amiga run a little more quickly. It's nothing spectacular but it is certainly worth the small extra cost.

Don't waste your money on smart card memory for the PCMCIA slot. This memory is quite expensive and runs very slowly. Sticking a memory card in the PCMCIA slot actually slows down the A1200. A battery-backed PCMCIA memory card might be useful for transferring data between machines, but that's about it.

Without extra memory and a hard drive, it is very difficult indeed to put your A1200 to creative use. These items should be the highest ones on your "wish list" of purchases, even before applications software. Don't make the mistake made by so many others of giving the applications a higher priority – you will only be letting yourself in for hours, days, weeks of frustration of trying to use software that requires greater resources to do anything other than load.

If you want everything on your A1200 to happen more quickly, you need an accelerator. These look very similar to memory boards and fit into the slot under the trap-door. You cannot have both a memory card and an accelerator fitted because there is only one slot. Accelerator cards have room on them to add memory chips so, if you are hankering after more memory and speed but can't afford both at once, be aware that if you

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all the other applications that are using the library have also left.

When an application asks to open a library not built into the computer (on the Kickstart chip), the Amiga will automatically look for it in the **LIBS:** logical device – that's the **Libs** directory on the disk you booted from. If the library isn't there, the application won't be able to open it, resulting in a "Can't open so-and-so library" error requester. The files in the **Libs** directory on the Workbench disk are all concerned with operating basic functions of the Amiga. But any programmer can write a library and, provided the documentation is freely available, all other programmers can borrow the routines in that library to use in their own programs. This is common practice in the Amiga programming world.

Another main attraction is the **Devs** directory. This contains files related to driving devices at the system level. The system will look in **DEVS:** (the **Devs** directory on the disk you booted from) for all manner of things. If you want to run a printer, the driver for that printer driver must be in **DEVS:Printers**. Not only that, but the file that drives the parallel or serial port (parallel.device or serial.device) and the file that drives the **PRT:** logical printer device (printer.device) must be in **DEVS:** as well. If one of these files is missing, expect problems when trying to print.

If you want to connect a particular type of monitor, the monitor driver must be in **DEVS: Monitors**. The keymap, which is the driver that decides what character is displayed on the screen when you press a key on the keyboard, must be in **DEVS:Keymaps**. The files that instruct the system how to set up software devices like **PC0:** (that bit of magic that enables MS-DOS floppies to be read and written in Amiga disk drives) are kept in **DEVS:DOSDrivers** for Workbench 2.1 and 3.0, and in the **DEVS:Mountlist** file for earlier versions of Workbench.

NOT MY TYPE

An excellent innovation that comes with Workbench 3.0 is DataTypes. This is a series of programs which, like libraries and device drivers, enables an application to do things that the application itself does not know how to do.

DataTypes deal with different types of data file formats (computer information stored on disk in a particular, standardised way). Most data that Amiga applications deal with is stored in memory in a totally different format to that which it is stored in the data file. To conserve disk space or to help speed up access times, most data file formats are either compressed or encoded. When an application wants to read and use this data it has to first be decompressed or decoded into what we will call a "raw" format. If you think of the stored data (the file stored on the disk) as being cooked, in order for an application to understand and use that data it must first be "uncooked" – made raw again.

The trouble is that there are lots of different computer data file formats. Graphics alone can be stored in dozens of different formats. For a graphics application to know how to load all of these formats, the programmers have to spend much longer writing file import routines than they would like to. Happily, the Amiga has a well supported graphics file format known as **IFF-ILBM**. This stands for Interchange File Format (the standardised way of storing data) InterLeaved BitMap (the type of data being stored). But no matter what data file format the graphic is stored in, it can only be displayed by first converting it into raw graphics data. Which is where DataTypes come in.

Picture this scene: you attempt to load a picture from disk from your graphics application that is stored in the XYZ graphics format – don't worry about what XYZ is (I made it up), the point is that it is not the standard **IFF-ILBM** format. The application, which was written for the Amiga, supports only the **IFF-ILBM** graphics format, so it refuses to load the XYZ file. That is what might happen if you are using Workbench 2.1 or below, before DataTypes were invented.

If you are using Workbench 3.0



Workbench 3 gets around the "too many file formats to cope" problem with its new DataTypes system. Instead of a program decoding data itself – which could be text, graphics, sound or just about anything – the program asks the system to decode data it doesn't understand and provide it with standard raw data that it does understand. Several DataTypes come with Workbench 3.0, more will come with 3.1, and there are a growing number of PD and shareware ones.

buy a memory card it will not be able to be used when you buy an accelerator. It should be quite easy to sell your A1200 memory board (or the chips on it at least) second-hand, but you'll be lucky to get much more than half what you paid.

Now for the rich kids. If you bought an A4000, your top priority must be more memory. Stick another 8Mb in there as quickly as you can.

No matter which Amiga you bought, if you are doing a lot of word processing or desktop publishing you will obviously need a printer. The best advice I can give you is to steer clear of "pin" printers. Inkjet printers produce much higher quality output, are faster, and cost about the same. Any inkjet printer that emulates a Hewlett-Packard DeskJet or Canon bubble jet is supported on the Amiga, although you may have to buy extra printing software for full support as the drivers that come with Workbench are a bit limited.

If you want a colour printer, currently the only low-priced ones worth considering are the DeskJet 310 and DeskJet 500C. Neither is properly supported by Workbench so you will require extra printing software that costs about £50. Colour "pin" printers are a false economy. They are very slow, very noisy and the ribbons contaminate and wear out very quickly.

Laser printers are plummeting in price. If you've got £500-£1,000 to spend on a printer and are not bothered about colour, checkout the new LaserJet 4 range. They are all superb printers, although obviously the more it costs, the better it is. Again, Workbench currently has no proper support for LaserJet 4 printers so you'll need to add the cost of that extra printer software.

Lastly, you might consider buying a second floppy drive. For A1200 owners this is not an alternative to buying a hard drive; it will make your life only slightly less frustrating. A600 owners without hard drives will benefit from a second floppy drive because they will be using Workbench 2.05 which isn't so difficult to run from floppy disk. If you own a hard drive, a second floppy drive is by no means essential, but it does enable you to make backups a lot more easily.

Your initial purchase of an Amiga was just the start of it all. Just like buying a video recorder or hi-fi, to use the equipment you have to buy more – tapes to play on the video, music to play on the hi-fi. To use the Amiga you have to buy software to run on it, and a lot of that software – even inexpensive software – will require more than just an "out of the box" Amiga.

It's the same with any computer, but the great advantage you have is that software and some hardware, is much, much cheaper for the Amiga than for other machines.

or better, and if the application knows about DataTypes, when you ask it to load an XYZ file, it simply says to the Amiga: "Oi, you, get off your backside and decode this XYZ stuff for me." The Amiga looks in the **DEVS:Datatypes** drawer to see if it knows what an XYZ file is and, upon finding that it does, decodes the XYZ graphic into the raw graphics data which any Amiga software that displays graphics must be able to understand. It then hands that data over to the application that asked for it so it can be displayed on the screen.

The DataType system is not limited to just graphics data. Literally any type of data can be handled in this way, provided there is a support file for it in **DEVS:Datatypes** and that the relevant program or programs to decode the data are in the **SYS:Classes/Datatypes** directory.

Workbench 3.0 comes with DataTypes to handle **IFF-ILBM** graphics, **IFF-8SVX** sounds, **ASCII** text and *AmigaGuide* help files. A single Workbench 3.0 system program, *MultiView*, is able to display graphics, text and help files and play sounds by using these DataTypes to decode the data. The DataType system has proved very successful and will be extended with later versions of Workbench to cater for animations and many other types of data. Already there are a few PD and shareware DataTypes available to handle the popular **PCX, GIF** and **JPEG** graphics file formats, although sadly, very few commercial applications currently support the DataTypes system. Once again, it is the PD and shareware programmers who are blazing the trail.

So if there was an XYZ DataType, *MultiView* would also be able to display XYZ graphics. As it comes on the Workbench disk, *MultiView* will display whatever file you have selected on the Workbench screen. This isn't much use for multi-coloured pictures but there is a **Use Separate Screen** item in a *MultiView* menu that can be used to display a graphic on a screen of its own. If you want this to happen automatically, you have to play around with the next Amiga concept we are going to discuss – ToolTypes.

TOOLS OF THE TRADE

You know how with some applications you can set-up the way you want them to operate and save those preferences so that whenever you start an application it opens just the way you like it? Well, ToolTypes is one of the Amiga's standard ways of specifying application start-up preferences.

You can get at them via the **Information** item in the **Icons** menu of Workbench. Click once on an application's icon, then select **Icons/Information** to get the information requester for that icon. The name of the application will be at the top of the requester, with the word **Tool** in brackets after it – tool is just another word for program or application. In the lower half of the requester you will see the ToolTypes list. *MultiView's* ToolTypes will all be enclosed in brackets, indicating that all of them are currently inactive. Third from the top you'll see the **SCREEN** ToolType, this is the one that will cause *MultiView* to automatically open a separate screen of the appropriate resolution for whatever is being viewed. To make it active, simply click on that item in the list, remove the brackets in the gadget below the list, press the Return key to accept the new ToolType, and click the **Save** button.

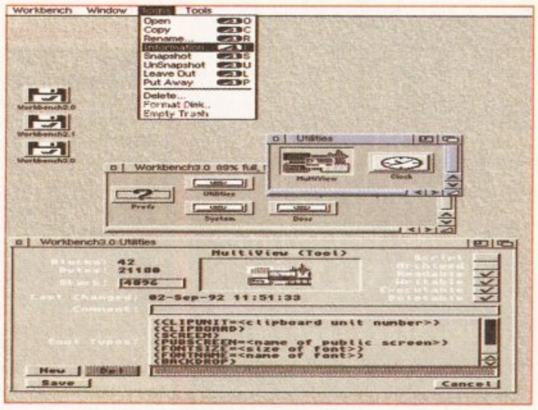
All the settings in the **Information** requester are saved in the icon file. A properly written Amiga application will always read this icon file upon start-up, and adjust its settings accordingly. You can see this in action by playing with the Clock in the **Utilities** drawer. If you look in its **Information** requester you will see that the **TOP** and **LEFT** ToolTypes are set to zero, which means the Clock will open at screen coordinates 0,0 – the top left corner of the screen. Cancel the **Information** window, run the Clock and drag it to another position on the screen. Select **Save Settings** from the Clock's **Settings** menu, and then **Quit** from the **Project** menu. Look at the Clock's **Information** requester again and you will see that the **TOP** and **LEFT** ToolTypes have been changed to whatever screen coordinates the Clock was at when you saved the settings.

Many applications will contain one or more preferences requesters that enable you to set up everything without worrying about ToolTypes. When you save those preferences, many applications these days will automatically add them as ToolTypes to the application's icon. Some will save preferences in a separate preferences file, either in the application's own drawer, or in **S:** or somewhere in **SYS:Prefs**. These preferences files are normally only editable from within the application that created them but the beauty of ToolTypes is that you can edit an application's preferences without having to run the application itself.

There is one very important ToolType that you should familiarise yourself with as quickly as possible and that is **DONOTWAIT**. All icons you move into the **WBStartup** drawer should have this ToolType. It informs Workbench not to wait until that program has finished running before opening the next program in the **WBStartup** drawer. If when booting you get a requester informing you that "Program so-and-so has not returned" and asking "Should I wait some more?", it will be because that program is in the **WBStartup** drawer and its icon does not have the ToolType **DONOTWAIT**.

Most properly written applications will have all the available ToolTypes for that application listed in the icon's **Information** requester – most of them will be bracketed like *MultiView's*. Often a bracketed ToolType will contain a list of options for that particular ToolType, between angled brackets to the right of an equals sign. For example *MultiView* has an inactive ToolType that reads

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ToolTypes enable you to set the startup preferences for tools and applications before you have to actually run anything. When a ToolType is (bracketed) it is currently disabled.

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When an Amiga application wants anything printed it passes the data to the printer driver, whose job it is to print the data on the specific type of printer he runs. Ask the Epson printer driver to print data on a Hewlett-Packard printer and he will happily give it a go, but as he doesn't know how to properly operate a Hewlett–Packard the results will always be garbage.

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(CLIPUNIT=<clipboard unit number>). If you simply remove the round brackets from either end, the ToolType, although made active, will be meaningless. You are expected to provide a number. Sometimes ToolTypes are not as well documented as this. The Clock, for example, has an inactive ToolType that reads **(WIDTH=)**. Again, simply removing the brackets is not good enough, you are expected to provide a number, which in this case the the number of pixels wide the Clock window should be.

The part of the ToolType to the right of the equals sign is known as the parameter. So **WIDTH=** is the ToolType, and **300** might be its parameter. Whoa! Slow down, because you probably missed an important point there. The ToolType is not **WIDTH**, it is **WIDTH=**. All ToolTypes that have parameters must be followed immediately by an equals sign. The ToolType **WIDTH =**, with a space between **WIDTH** and **=** would not be valid. The parameter, on the other hand, may have one or more spaces between it and the equals sign. So **WIDTH=300** and **WIDTH= 300** are both valid ToolTypes and mean exactly the same thing. ToolTypes are not case sensitive, so **width=300** and **WIDTH=300** and **Width=300** are all the same thing, but for the sake of convention capitals are used mostly.

A ToolType's parameter does not have to be a number, often it will be a word or a string of text. You might be required to supply the word **Yes** or **No** as a parameter to specify whether a particular feature should be on or off when the application opens. Often the inactive ToolType might look something like **(SOMEFEATURE=<Yes|No>)**, where. The "bar" character **|** between **Yes** and **No** is computer shorthand for the word "or". On your keyboard the bar character is on the Shifted key above the Return key to the right of the equals sign. Sometimes the **Yes** or **No** parameter is optional. The ToolType **SOMEFEATURE** on its own may be the same as saying **SOMEFEATURE=Yes**, and **(SOMEFEATURE)** may mean the same as **SOMEFEATURE=No** but the **Yes|No** system is the standard way of doing it.

Another text parameter for a ToolType might be a path or filename. For example an application might have a **CONFIG=** ToolType that requires a parameter like **Work:WonderFile/Special.CFG.** Another might want to know where on your hard disk to look for a certain type of file, like ARexx scripts particular to that application for example, and might have a **REXXPATH= ToolType** that requires a parameter like **Work:WonderFile/Rexx/**.

Note the slash on the end of that string of text. This is the proper way of specifying a path; strictly speaking, without the final slash that string of text would be specifying a file named **Rexx** in the **Work: WonderFile** directory. In practice, Workbench and most applications are intelligent enough to know what you mean if you leave off the final slash from a path.

Quite a few modern applications will have **FONTNAME=** and **FONTSIZE=** ToolTypes, or the equivalent. Alas, although the parameter for **FONTSIZE=** is always going to be a number, no standard is being practised among developers for the **FONTNAME=** ToolType. Some might require you to provide, for example **times.font** as a parameter, others will accept just **times**. If there is no documentation and one style of parameter doesn't work, try the other. Keep in mind that not all applications will have a **FONTNAME=** ToolType. If it has one, or an equivalent, it will already be in the application's icon **Information** requester.

GOING DOWN THE PUB

The last ToolType I want to discuss is the **PUBSCREEN=** one. This ToolType is shorthand for an Amiga concept known as a "public screen" — a screen that many applications can share. Just as you can have many applications running in their own windows on the Workbench screen, so any application that has a **PUBSCREEN=** ToolType is able to open in a window on any screen that has (by the application that opened the screen) been declared as open to the public – the "public" being the other applications.

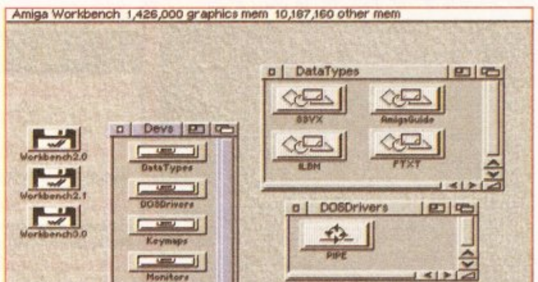
Workbench is a public screen. In the old days Workbench was the only public screen but nowadays any application can declare its screen as open to the public. The name of a public screen is not necessarily the name you see in the screen's title bar. For example, in the Workbench title bar you see either "Workbench Screen" when the screen is inactive, or "Amiga Workbench" and some memory information when it is active. Neither of these are the public screen name. The public screen name for Workbench is, funnily enough, just "Workbench".

A particular application's public screen name, if it opens a public screen, will be documented in that application's manual, and this will be the name you must supply as a parameter to the **PUBSCREEN=** ToolType. The public screen name must not be enclosed in quotes, even if the name of the public screen is more than one word. Always type the name of the public screen just as it is – upper and lower case exactly as specified in the application's manual – not enclosed in quotes.

I love public screens. Right now I'm tapping these words into the *Protext* word processor and I can keep an eye on the time because I've got the Workbench Clock utility running in a window on the same screen as *Protext* by adding a **PUBSCREEN=Arnor** ToolType to the Clock's icon. Now I could have achieved the same effect by running *Protext* and the Clock on the Workbench screen but my Workbench is a pretty-but-slow 16-colour one and I'd rather have *Protext* running on a faster 4-colour screen. Public screen is just one more way that Amiga owners can customise their working environments to suit themselves.

Public screens are probably something you won't get into until you've acquired one or two programs which open public screens and a few more little utilities that support the **PUBSCREEN=** ToolType. The shareware scene is the best place to go hunting for inexpensive toys. Get hold of *PSM (Public Screen Manager)* on Fish Disk 911 if you want to fully exploit public screens – any large PD library will stock it.

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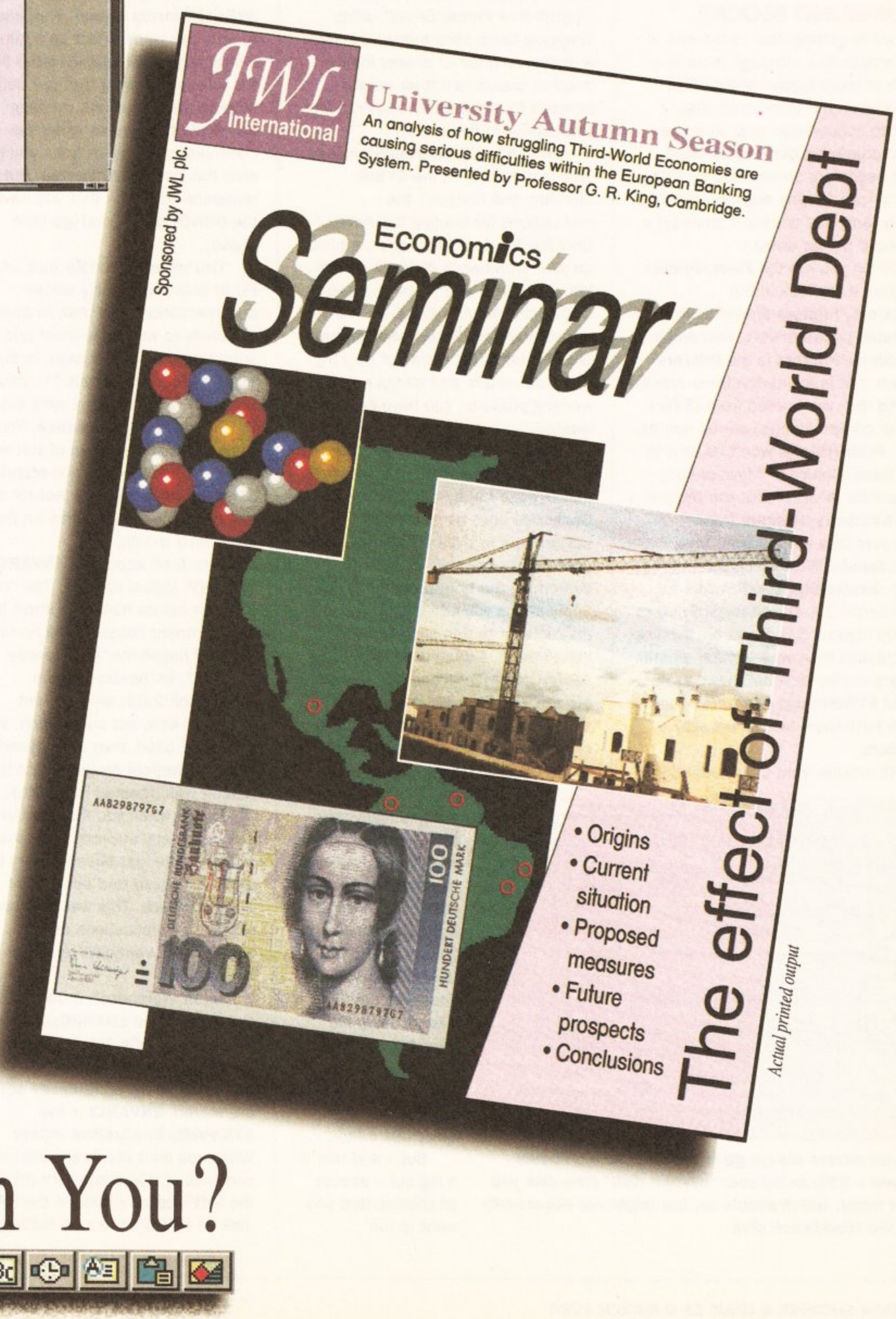


Files in the Devs drawer enable the Amiga to communicate properly with other devices, including the screen display and the keyboard. The Workbench 3 Devs drawer also contains support for DataTypes.

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Unless, you buy an expensive PC or Macintosh,™ a high priced Colour PostScript™ Laser Printer, and a complex, costly Desk Top Publishing Package...



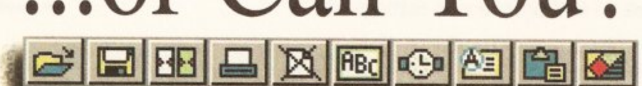
Actual printed output

If you're looking for a quality Word Processor/Publisher that performs as well as this, you may well start by searching through PC and Apple™ Macintosh™ software catalogues.

Even then though, you probably won't find a program that will combine the very best in Word Processing *and...* easy to use integrated DTP type facilities.

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SYSTEM 4 – THE DREAM

System 3.1 (the combination of Kickstart 3.1 on ROM and Workbench 3.1 on disk) is just around the corner, and although there will be a few major changes from Workbench 3.0, it'll be essentially improvements and more of the same. Upgrade kits will be made available, and there appears to be no reason (the exact details are scanty) why any Amiga, with perhaps the exception of the old 256K A1000 and 512K A500, cannot be upgraded to System 3.1. Don't expect it to turn your non-AGA machine into a 256-colour Amiga though – that's something entirely different that requires a change of motherboard and the addition of several chips other than Kickstart. It will mean, however, that most of the Amiga community will be able to fit and use the same version of the operating system, provided they are willing to stump up the cost of upgrading. When 3.1 is released you can expect almost all Amiga developers (and a lot of them already have) to completely drop support for Workbench 1.3, and maybe even Workbench 2.04 and 2.05. In this event it will be a case of upgrade or suffer.

The big, big operating system changes are being saved for System 4, expected some time later this year along with the so-called new generation Amiga. Don't hold me to that, it could just as easily be 18-24 months away, but the rumour is that System 4 should be launched towards the end of this year. The most important thing I can tell you about System 4 for now is that it will not run from floppy disk. So, reading between the lines, any future System 4 based Amiga that is released – even if it is a low-end game machine – will either have to come with a hard drive or CD-ROM drive fitted as standard.

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STUMBLING BLOCKS

OK, we're getting near to the end of this article and, although there is a stack of more fascinating stuff to discover on the Workbench disk, I want to concentrate now on some basic stumbling blocks that often have beginners threatening to throw their prized Amigas out the window. Firstly (and very quickly, I promise) a bit about printer drivers.

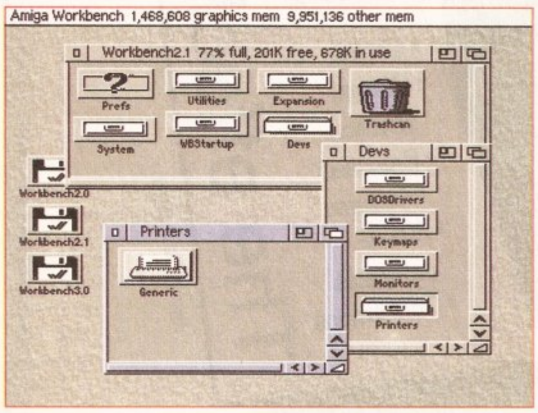
When you run the **Prefs/Printer** program it will look in the **SYS:Devs/Printers** drawer for the available printer drivers. Remember, **SYS:Devs/Printers** is the **Printers** drawer that is inside the **Devs** drawer on the disk you booted from **(SYS:)**. If your printer driver(s) are on another disk, **Prefs/Printer** won't be able to find them. Solution? Move or copy the printer driver(s) that you require into **SYS:Devs/Printers** from wherever they are –**Extras:Devs /Printers** for Workbench 2.04 and 2.05, **Extras:Storage/Printers** for Workbench 2.1 and **Storage:Printers** for Workbench 3.0. If you are running a hard disk then your "spare" printer drivers will be (at least they should be) in **SYS:Storage/Printers**. Copy them from there into **SYS:Devs/ Printers**.

(If anyone from Commodore's engineering department is reading this, we could do with a foolproof "Install New Printer Driver" utility . Dragging icons from a drawer inside a drawer to another drawer inside another drawer is not as easy a concept for newcomers to grasp as you appear to think it is.)

And so to the **Startup-Sequence**. This is a text file in the **SYS:S** directory that contains the instructions for booting the Amiga. Only the **Startup-Sequence** supplied on your Workbench disk will do the job completely and properly. *Never, ever, alter this file. Not ever.* Altered or non-standard **Startup-Sequences** are often the root cause of puzzling error requesters and things not working properly. You have been warned.

Moving swiftly along, we come to the **User-Startup**. This is a list of instructions run by the **Startup-Sequence** and, as its name suggests, it is a file created by the user (that's still you) in order to customise the boot procedure. Some applications will add lines of instructions to this file when you install them. This usually applies to **Assign** commands and sometimes others. You may add lines of instructions to this file yourself. For example, you might pick up some PD or shareware utilities that you would like to run automatically every time you boot. A classic example is a virus checker. In this case, you would add the necessary commands to the **User-Startup** file. There isn't actually a **User-Startup** file provided in **SYS:S**, you will have to create one yourself using *Ed* or any other text editor.

But – and this is a big but – almost all utilities that you want to run automatically when booting can be run by dragging their icons into the **SYS:WBStartup** drawer. This has exactly the same effect as adding an instruction to the **User-Startup** file, the difference being that you don't have to sweat buckets worrying about whether you've typed the command correctly or not – you just drop the icon in **WBStartup**. But remember to check that you have set the **DONOTWAIT** ToolType (see above).



Printer drivers always go in the SYS:Devs/Printers drawer – SYS: being your "system disk" (the disk you boot from), which should be, but might not necessarily be, the Workbench disk.

You will occasionally pick up a PD or shareware utility whose documentation says that, in order for the utility to work, you must add one line of instructions or more to the **Startup-Sequence** itself. I'd rather poke hot needles in my eyes than touch my **Startup-Sequence**. You do what you like. For those of you who have fallen foul of the non-standard **Startup-Sequence**, look out for a handy pack of hot needles on the cover next month.

Now a bit about the **ENVARC:** and **ENV:** logical devices. The "env" in those device names is short for "environment variables", a horrible piece of jargon for "preferences settings". In the days before Workbench 2.04, environment variables were not used much. When they were used, they were saved to the **ENV: logical** device, which by default was situated in the RAM disk. Obviously, when you switched off the computer, any environment variables in **ENV:** were lost because they had not been saved to a permanent storage device. This was the main reason no applications used environment variables to save preferences.

Enter Workbench 2.04 and the invention of the **ENVARC:** device, which is short for "environment variables archive" or, in other words, the place where preferences settings are stored. **ENVARC:** is the **SYS:Prefs/Env-Archive** drawer. When you boot the Amiga the entire contents of this drawer are copied to the **ENV:** logical device in the RAM disk so that preferences settings can be accessed quickly from memory rather than slowly from disk. All the standard Workbench preferences programs will save their settings into the Sys directory in the **ENVARC:** device and at the same time into the Sys directory in the **ENV:** device. In this way, preferences settings remain quickly accessible and are preserved when you switch off the computer.

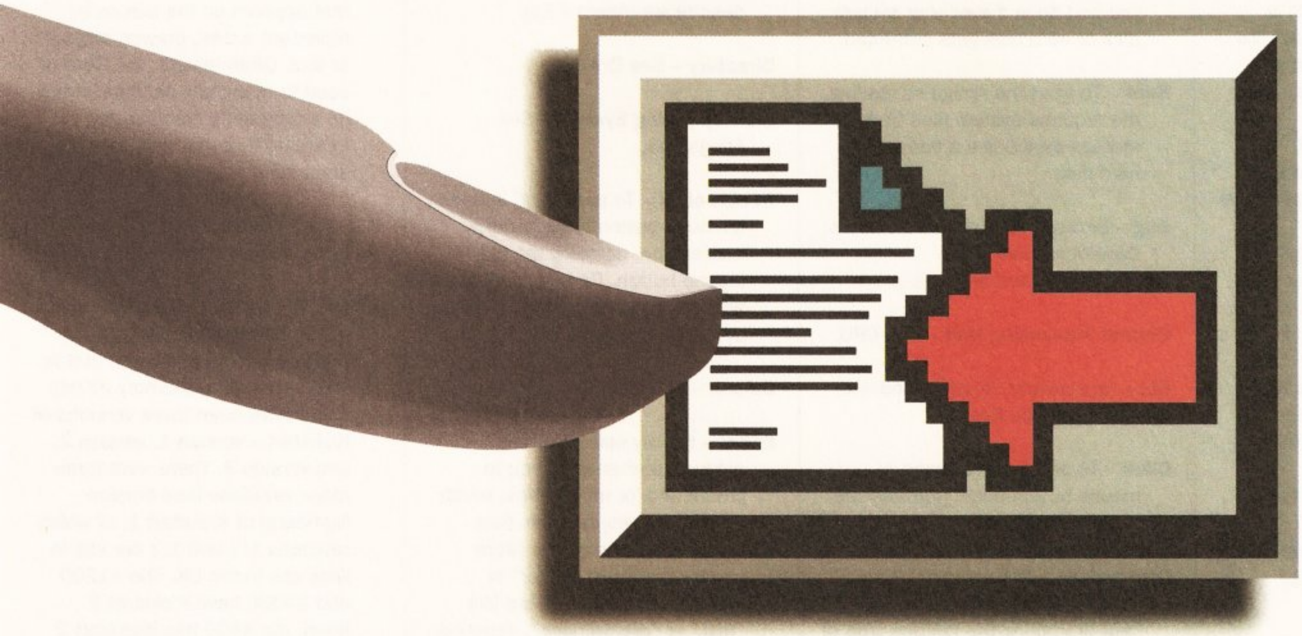
These days more and more applications are quite sensibly storing their preferences settings in **ENVARC:**, which is yet one more reason why it is imperative that your Amiga is booted with a proper boot disk and proper **Startup-Sequence**. If you ever get a requester informing you that **ENVARC:** or **ENV:** cannot be found, it will be either because the boot disk does not contain a **Prefs/Env-Archive** directory or because the **ENV:** device has not been set-up properly by the **Startup-Sequence**.

And that's it. Sadly we've come to the end. There's only so much we can cover in one magazine article, but by now you should be able to see that the Amiga is more than just a lump of plastic and a few floppy disks. It is a large collection of files that knit seamlessly together to provide a complete operating system. Understanding how and why these files knit together is the key to understanding the Amiga. and understanding the Amiga is the key to using it creatively. Many people say they can't be bothered to learn, muttering excuses like "I'm not a technical person" or "I'm too old to understand". That's a load of cobblers.

Provided you are prepared to read and read then read some more – and put in the necessary keyboard time – becoming an Amiga expert is no more difficult than learning anything else. Too many Amiga users falter at the first obstacle and are unwilling to cut a swathe through the jungle of jargon. But, if you get through that, the rest is a walk in the park.

continued on page 28

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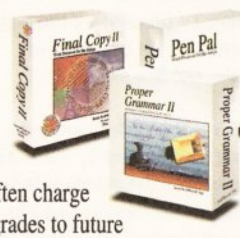
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AS



GETTING TO TERMS

Here's where we translate that computing double-dutch into English

One of the definitions of the word "jargon" is "meaningless talk". To the beginner that's exactly what the peculiar words and phrases connected to the subject of computing appear to be. But they all mean something and all you have to do is find out what.

Oh come on, don't whinge! It's new, that's all. As you read and speak the jargon more often, so you will become familiar with it. It takes a little time and we all learn at different speeds, so don't be too hard on yourself. Just keep bashing away and things will start to fall into place.

To start you on the road to success we present a Jargon Busting Special, two pages of explanations of important computer and Amiga related words and phrases.

8SVX — An acronym for, er, um... (embarrassed cough)... Well, whatever it stands for, it's the the standard Amiga file format for sounds, more properly written as **IFF-8SVX.**

Acronym – A word formed from the initial letters of a group of words. For example, ROM stands for Read Only Memory.

Amiga — To those in the know it is a computer, to everyone else it is a wristwatch. In case there are any Scottish TV presenters reading, the stress is on the second syllable, not the first.

AmigaDOS – The disk operating system (DOS) used by the Amiga that provides the machine's basic functions. Also widely used to mean what you are using when you type commands into a Shell window.

Application – Any computer program, but normally used to mean a large one. See Utility.

Argument – See Parameter.

ASCII — An acronym for American Standard Code for Information Interchange. Text editors normally save their text in ASCII format, most word processors will save in their own format but have ASCII as an option as well.

Backup — What you will have wished you had done if ever your system disk or hard disk gets corrupted.

Boot – To start the Amiga by reading the required system files from a storage device like a floppy or hard disk.

Bug – Errors in hardware or software. Developers call them 'undocumented features'.

Central Processing Unit – See CPU.

CLI – An acronym for command line interface. See Shell.

Click – To press and release a mouse button once, normally the left mouse button.

Commodore – The company the Amiga press loves to lay into for "not promoting the serious side of the Amiga" enough, despite the fact that many professional film and video producers use it to create special effects and that many professional musicians use it to drive their MIDI instruments, and that many professional designers use it for desktop publishing, and that many businesses use it for presentations and point-of-information systems, and that many schools and colleges use it to teach with, and that ... (Okay, we get the point – *Ed.*)

CPU – An acronym for central processing unit, the chip that is the brains of the computer. The CPU in your Amiga is one of the Motorola MC68000 series. The A1000, A500, A500 Plus, A600, A1500 and A2000 have a 68000 CPU fitted. The A1200 has a faster 68020 CPU. The A3000 and A4000/030 have even faster 68030 CPUs, the A4000/040 has a faster still 68040 CPU. The fastest (and last in the series) Motorola CPU is the 68060, which may or may not be used in future Amigas.

Data — Any collection of information.

Debug – Something given away free with desoftware.

Default – Something else given away free with desoftware.

Delete – The best thing to do with desoftware (Ahem – Ed).

Directory – See Drawer.

Disk Operating System – See AmigaDOS.

Double-click – To press and release a mouse button twice in quick succession, normally the left mouse button. Disks and drawers are opened, and programs are run by double-clicking icons.

Drawer – See Directory.

Editor – Strictly speaking, any program that enables you to create and/or modify files, which means that any program that saves files is an editor. More usually the term, "editor" is preceded by another word like "text" or "preferences", denoting the type of file the program edits.

Floppy Disk — Those thin, square things you shove in the similarly shaped, but slightly larger slot in the side or in the front of your Amiga. It's the disk inside the plastic case that is floppy, not the case itself, which is hard. Do not store your floppy disks close to anything that emits heat, a magnetic field or ultra-violet rays. Do not use the metal shutter as a makeshift catapult. Do not play silly buggers by twizzling the point of a pen around in the hole in the hub on the back of the disk. Do not pass Go. Do not collect £200.

Font – A particular design of a set of letters. The Amiga has one built-in font ("topaz"), any others must be loaded from disk. Fonts come in various sizes, defined in "points". The bigger the point-number, the taller and wider the characters – and the more memory the font will consume when loaded.

Graphical User Interface – See GUI.

GUI – An acronym for graphical user interface, which essentially means the menus, requesters and toolbars that a program or operating system uses to interact with the user (that's you). In speech GUI is often pronounced 'gooey', as in what Commodore Press Release are.

Icon – Strictly speaking, an image that appears on the screen to represent a disk, drawer, project or tool. Often though, the word is used to mean any pictorial image (in a program's "toolbar' for example) that you click to make something happen.

K – One kilobyte, which is 1,024 bytes. Also written as Kb or KB.

Kickstart – A chip inside the Amiga which contains the part of the Amiga's operating system that is held in read-only memory (ROM). There have been three versions of Kickstart – version 1, version 2, and version 3. There were three major revisions (see Version Numbers) of Kickstart 1, of which revisions 1.2 and 1.3 are still in wide use in the UK. The A1200 and A4000 have Kickstart 3 fitted, the A600 has Kickstart 2 fitted.

The various versions of Workbench are designed to be used with the similarly numbered versions of Kickstart, although they are mostly "backwards compatible". So while it is not at all sensible to run Workbench 2 with Kickstart 1, or Workbench 3 with Kickstart 2, it would be perfectly feasible to run Workbench 1.3 or 1.32 with Kickstart 2, or Workbench 2.04, 2.05, or 2.1 with Kickstart 3. If your Amiga still has the Kickstart 1.2 or 1.3 ROM in it you should consider buying the Release 2.1 Enhancer Kit in order to upgrade to a later (and much better) version of the operating system.

Later this year a Release 3.1 Enhancer Kit should be made available, although it is unclear at this time which Amigas will be able to be upgraded with this.

Kilobyte – See K.

Hard Disk – A piece of hardware that can be attached to your Amiga, on which it is possible to store the equivalent of the contents of many floppy disks. Using an Amiga without a hard drive is like trying to ride a bike up a never-ending steep hill.

Hard Drive – Exactly the same thing as a hard disk.

WITH THAT JARGON

Hardware – The physical equipment used with computers, including such things as memory, disk drives and the central processing unit (CPU).

IFF – An acronym for Interchange File Format, the standard file format for many types of Amiga data, including sounds, graphics and text. The term, IFF, is often carelessly used in books and magazine articles in place of IFF-ILBM, the standard file format for Amiga graphics. Strictly speaking, IFF is just the file format, ILBM is the actual type of data, the graphic in other words.

ILBM – An acronym for InterLeaved BitMap, the standard Amiga file format for graphics, more properly written as IFF-ILBM.

Megabyte – See Mb.

Mb – One megabyte, which is always 1,024 kilobytes when used in reference to memory, but can also be 1,000 kilobytes when you are trying to sell a hard disk and want to make it sound like it is bigger than it really is. Allegedly.

Morphing – This word is derived from metamorphosis and describes an effect in which one image "morphs" into another over an animated sequence of frames. It's currently in vogue with commercials and science fiction film producers.

Open – A generic term which means "to make something available for use". You can open a drawer to get at the icons inside that drawer, you can also open a program to make use of that program, and from within a program you can open requesters.

Operating System – The Amiga's operating system (often shortened to "system" or "OS") is the complete combination of the software on the Kickstart chip inside the computer, plus the software that is provided on the Workbench, Extras, Fonts, Locale and Storage disks.

OS – An acronym for operating system.

Parameter – An additional piece of information that determines the exact action of a command or option. A filename would be a parameter for a load or save option, for example. Also known as an 'argument' because that's usually what ensues when you supply a wrong parameter.

Partition – A section of a hard drive that the system treats as a separate drive.

Program – Another word for computer software. Stick-in-the-mud schoolteachers please note that this is not the same as a "programme" which is something you watch on television.

Project – A file in which information created by a program is stored.

Revision Numbers – See Version Numbers.

Shell – The command line interface (CLI) that is used to enter typed commands, much loved by aged computer users who can't stand change, and techies who want to appear cleverer than the rest of us.

Sleepy Pointer – The Amiga used to display a pointer that was a "dreams" cloud with "Zzzz" in it when it was busy, indicating that you should wait until it "reawakens". This was called the sleepy pointer, and although nowadays the Amiga puts up a less romantic stopwatch as a busy pointer, you will still come across the busy pointer referred to as the sleepy pointer by long-time Amiga users who can't break the habit.

Software – Programs that are used by computers.

Storage Medium – A hardware or software medium on which data is stored. This includes permanent media like floppy disks and hard disks, plus non-permanent or "volatile" media like memory and Post-It notes.

String – A piece of text that is normally treated as a single unit. You type strings into requesters that enable you to edit things like filenames (like the **Icons/Rename** menu item). The typical maximum length for strings is 255 characters, including spaces, enabling you to type a path before a filename.

Title Bar – You see that bar at the top of the screen which displays the title of the screen...? Windows have title bars too. Title bars can generally be dragged up and down and to the left and right of the screen.

Tool – Any computer program, not just those in the 'Tools' drawer.

Version Numbers – The version number of a piece of software or hardware is normally written as a decimal number. The number to the left of the decimal point will be the version number; the number to the right of the decimal point will be the particular revision of that version. So version 4.31, for example, would be the 31st revision of version 4 and is best read as "version four point thirty-one".

Commodore's "real" version numbers for Kickstart and Workbench work like this, as discovered by selecting the About or Version item from the Workbench menu. A version number of 39.106 would be a later version than (for example) 39.21 because the revision number of the first (106) is higher than the revision number of the second (21). Whenever you are referring to versions of Kickstart or Workbench it is always better to quote these numbers as well as just 'Kickstart 2' or 'Workbench 3'.

Alas, not all developers adhere to the above convention and it can be particularly confusing when a revision jumps from, for example, version 4.49 to version 4.5. In this case, version 4.5 would actually be version 4.50, one more than 4.49. Developers will often leave off the zero when they hit "round" revision numbers.

In books and magazine articles you will sometimes see version numbers written as version 1.0x or 2.x. The "x" in these version numbers stands for any number. So 1.0x means any revision of version 1 that starts with '0' – 1.01, 1.02 and so on. Version 2.x would mean any revision at all of version 2 – 2.01, 2.1, 2.46, 2.7, 2.99, even 2.999 if that's the revision numbering system the developers have adopted.

With particular reference to the Amiga's operating system, the term "Workbench 2.0x" will mean versions 2.04 or 2.05, but not 2.0 (the first "developer" version) or 2.1 (which would be better labelled 2.10). The term "Workbench 2" or "Workbench 2.x", on the other hand, will mean any revision of version 2 of Workbench, although strictly speaking this will not include the first 2.0 developer version because it was full of bugs and doesn't work properly.

Various words are used to mean the concept of "and any version thereafter", the three most common being "better", "later" and "greater". So the term "Workbench 2.04 or better" means versions 2.04, 2.05, 2.1, 3.0, plus any future versions of course. This "x" convention applies to all hardware and software, not just Workbench.

Volume – A floppy disk, a hard disk partition, or the RAM disk.

Volume Name – The name of the volume (see above), as opposed to its device name. For example, the RAM disk has a volume name of "RAM Disk" and a device name of **RAM:**. If you rename "Ram Disk" as "CorBlimey", its volume name has changed but its device name is still **RAM:**.

Utility – Normally used to mean a small program that does just one or a few simple jobs but it can refer to any computer program, not just those in the Utilities drawer. See Tool.

Wetware – Stuff between your ears.

Workbench – Strictly speaking, Workbench is the Amiga's graphical user interface (GUI), but it is also widely used to mean the part of the Amiga's operating system which is loaded from disk as opposed to the part that is held on the Kickstart ROM.

Mass man

Gary Whiteley zooms in on two more batch-processing 'front-ends' for ASDG's Art Department Professional and Morph Plus programs.

If you've ever tried using ASDG's *Art Department Professional* or *Morph Plus* for multiple image processing then you'll know how tricky it can be to get your needs met simply and easily. You could use *FRED* (although most people I know find it too frustrating) or you could write a few ARexx scripts, but neither solution offers the ease of being able to push a few buttons and gain instant gratification.



With such needs in mind there has recently been a slew of programs designed to take the strain out of using *ADPro* and *Morph Plus*. First there was *ProCONTROL* (reviewed in *AS*31), then along came MultiFrame-*ADPro* and *ADPTools Professional* – our two subjects under the microscope today.

SOME PHILOSOPHY

Video graphics producers and animators often need to process sequences of images, unlike DTP users who usually only manipulate one image at a time. Such multiple processing should surely be straightforward – but looking more closely you'll quickly find it fraught with difficulties.

The first problem concerns file formats. Because a sequence for processing may well include images in several different formats: JPEG, IFF24, YUVN and ANIM, to take four common examples. However, for a completed project these usually need to be in the same format – let's say 24-bit IFF.

If there are only a few files to convert then its not too much hassle to do them all individually. But what if you have 100 or more? No one in their right mind would want to sit there and convert them image by image! And what happens when every image has to be scaled to a particular size and then embossed? Or a sequence of images has to be made into a single seamless, perspective, fly-past? These are just a few examples of the problems you will find associated with multiple image processing.

The answer is Batch Processing – telling *ADPro* to take one image after another and convert them to the chosen format, size and so on. This is easier said than done, unless you happen to be an ARexx genius. And even if you are, you'll still have to write several different scripts to handle all your basic processing needs. This is where programs such as *MultiFrame*, *ADPTools* and *ProCONTROL* come into their own.



POINT & GO

Each program offers a point-and-click environment through which a series of instructions can be passed to *ADPro* to cause it to process automatically a defined sequence of images. How these objectives are ultimately achieved differs from program to program but by and large they all get the job done and, in many instances, a damn sight quicker and easier than writing an ARexx script for *ADPro* ever could.

Individual features vary but all the programs have one feature in common – a graphic interface to harness the raw power of *ADPro*. First by selecting a series of images, then by defining the process/es which will be enacted upon them – whether it be scaling, colour balancing, the application of effects, format conversions or any of *Morph Plus*' complex functions such as perspective, ripple, sphere and collapse (though morphing itself cannot be controlled in this way). You also get to control how the new images will be saved.

Anything that *ADPro* and *Morph Plus* can do (except for morphing functions) can be controlled by these programs, and some functions can even be extended.

Once it has been started, an entire batch process should run automatically if properly set up. Images will be loaded, processed and saved while you do something more interesting. Believe me, almost anything is more interesting that batch processing images!

BIG AMIGAS NEEDED

So what's the catch? Well it certainly takes a lot of Amiga power to run a combination of *ADPro* and any of these programs. The first requirement is a biggish hard drive to store programs and images. Next you'll need a truck load of memory (start from around 8Mb and work up). If processing speed is important then a fast Amiga is a must – either accelerated or with a 68030 or 68040 processor built-in. Lastly, although a graphics card isn't obligatory one will certainly help when it comes to checking the quality of your work if you require professional-looking results. Of course you'll also need *Art Department Professional* or *Morph Plus*, both of which need an Amiga with at least AmigaDOS 2.04.

All this adds up to a pretty big wish-list for the vast majority of Amiga owners. However, it is fairly standard fare for serious graphics and animation producers. Let's face it, these tools are for professionals, so there's no point in having wimpy-spec' Amigas holding them back!

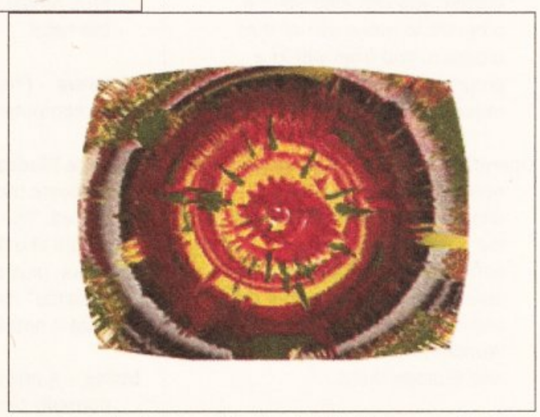
Now let's get on with the show...

ADPTools Professional

Of the three programs reviewed here (including *ProCONTROL*) *ADPTools* caused me the most grief, mainly because of its pretty (useless) manual. That's not to say it doesn't do the job but it can be a real pain to figure out something as simple as how to get properly started, never mind how to use *ADPTools* for the purpose for which it was intended.

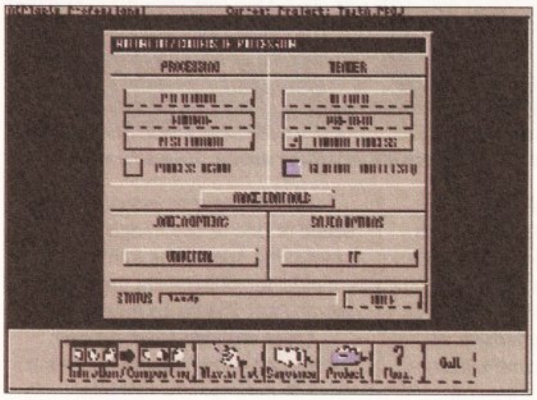
After a few hours of frustrating exploration, hangs and forced restarts, the ice began to melt. If I hadn't been reviewing the product I would certainly have become quickly annoyed by the unnecessary learning curve I was forced to endure before I finally got to grips with this software.

Authored with CanDO, *ADPTools* opens its own custom window and is



Here's a simple example of what batch processing can achieve – in this case using* Morph Plus' *Sphere...

ipulations



ADPTools Professional – *authored with* CanDO – *is built to make your batch processing less arduous.*

completely mouse and keyboard driven, with not a pull-down menu in sight! The opening moves are straightforward enough, once you've been over them a hundred times – which you will, because the manual is more like a short novel than an instructional guide. Here in their glory are the basics of batch processing with *ADPTools*:

- Define Preferences: these include Load and Save directories and *ADPro* memory usage. These actions are only necessary the first time round, although changes can be made whenever required.

- Create A Project (or load an old one). This includes creating one or more sequences that hold lists of the image(s) to be processed.

- Create a Master List from existing sequences and images. Define how many frames each image will spawn.

- Define the processes that the Master List contents will have thrust upon them and the way in which the results will be saved.

- Render the Project (while you do something else)

- View the results....

The trouble is, it ain't that easy. Because of the similarity between several of *ADPTools*' requesters, and due to the lack of instructions simple enough for me to follow, I kept coming unstuck. After a few thorough readings of the manual I was at last experimenting happily, though not always successfully. On occasion I duplicated my efforts with *ProCONTROL*, which caused me to wonder just how *ADPTools* could justifiably call itself 'Professional' – unless to justify its high price tag. I found that processes that should have been dead easy, simply weren't happening. For instance, batch processing 24-bit files to 8-bit ones and then converting them to Line Art just wouldn't work with *ADPTools*, whatever I tried. However, the same actions worked first time with *ProCONTROL*. Why? I guess it must be down to *ADPTools*, because the copy of *ADPro* I used was the same in all tests.





...you can sit back and watch as your images are manipulated without you having to waste your time.

Mind you, *ADPTools* also has some good points. One of the best is being able to control all of *ADPro*'s functions, not just on a one-off basis but also extended over a range of frames. A simple example would be the application of the Blur operator. Set the blur levels for the first and last frames (and any between if you wish because this is a keyframe-based system). When the sequence is processed, the relevant blur levels will be extrapolated and applied to each image in the chosen range.

You can imagine how applying such a system to perspective operations could cause interesting ADO effects to become possible.

The downside is that *ADPTools* seems to make everything rather harder than it should for the sake of a little bit of additional flexibility. It also does little that *ProCONTROL* can't do, yet it costs twice as much. And, like *MultiFrame*, it really makes a meal of compositing operations. It requires an additional Alpha channel sequence to be generated for successful compositing of multiple frame sequences.

In plain English this means that you need to generate foreground and background images as well as a third set of greyscale images that are used to control the mixing levels between the foreground and background sequences. On the other hand,



Yet another process is called Spline control. This extends to how an effect can be applied over time.

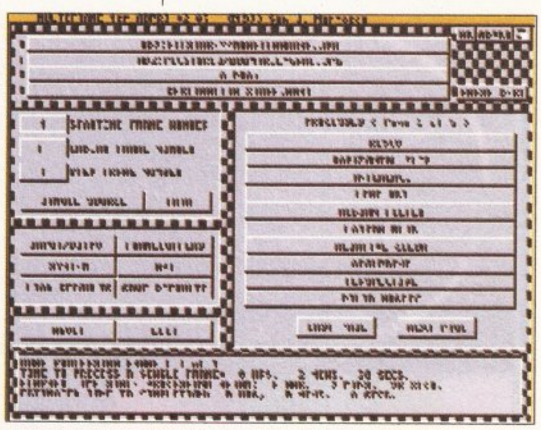
ProCONTROL doesn't require these Alpha images, yet its compositing doesn't appear to suffer in any way.

My point is this: just what is the point of all the extra processing time and energy required by both *ADPTools* and *MultiFrame*?

MultiFrame

What about *MultiFrame*? Not only does it look easier to use – it is easier to use. That's only the half of it I'm afraid. Sadly, *MultiFrame* also fails to reach the required standard, for several good reasons....

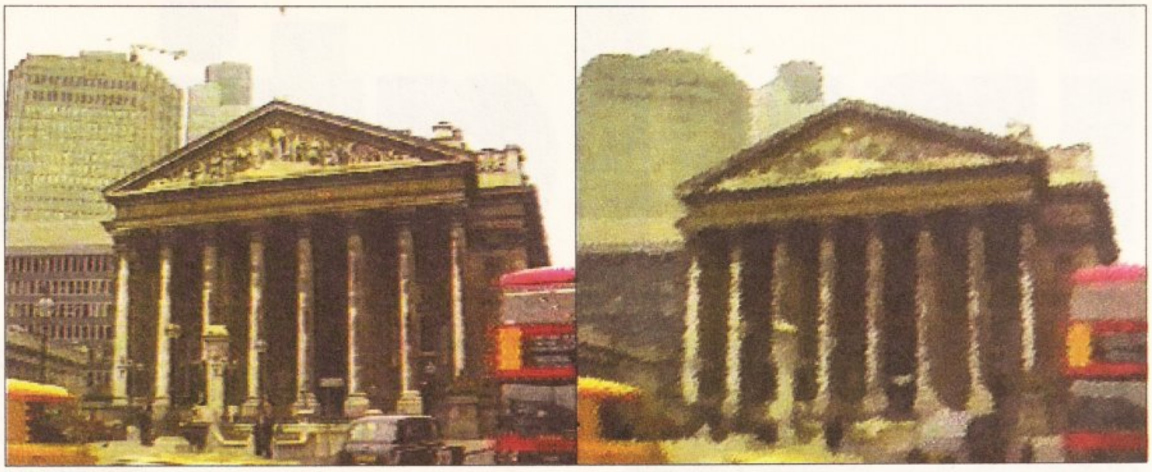
The first is that *MultiFrame* (paradoxically, considering it's name) cannot apply multiple operations to an image sequence. It only permits one process to be chosen for each pass – meaning that several discrete passes are required in order to achieve a multi-effect result such as Scale, Colour_To_Grey and convert to Line Art. Both *ProCONTROL* and *ADPTools* do multiple effects.



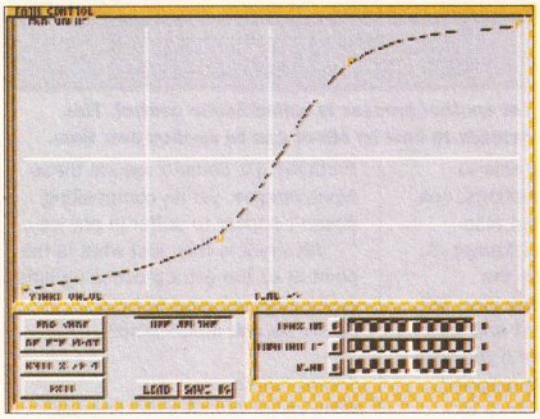
MacroSystemUS's MultiFrame-ADPro *is just one of several recently-released applications designed to simplify the use of ASDG's* Art Department Professional *or* Morph Plus *image processors.*

The second problem is that a single image cannot be extrapolated over a series of frames as a background for a composited sequence. For example, say I have an image I want to use as a background for a 250-frame ADO-type sequence (for which I have previously prepared the foreground images). The only way to achieve this effect is to copy the background image 250(!) times.

Each of these must be numbered individually (for example BG.0001, BG.0002). They then have to be saved to disk in order that *MultiFrame* can find and load each separate image every time a new background is needed – even though they are all identical! This is just plain stupid and could easily overload your hard disk into the bargain. In fact, having to call your images 0001 and so on is daft anyway (try doing the renaming by hand!). However such a standard requirement as adding a static background over a series of frames really shouldn't cause so much fuss. The other programs don't require it, why should *MultiFrame*?



One of MultiFrame's 'unique' effects in action – putting a Fresco on an otherwise mundane scene. Looks neat uh?



MultiFrame *includes spline-based effects control among its array of image processing options.*

But it's not all doom and gloom. Like *ADPTools*, *MultiFrame* offers spline-based control over the progression of an effect across a number of frames. In practice this enable such effects as Ease In/Ease Out to be generated, making animated effects smoother and more pleasing to the eye. It also provides an easier approach than *ADPTools* though not as pleasant nor comprehensive as *ProCONTROL*'s. *MultiFrame*'s best feature is its support for several different graphics cards – including Harlequin, Retina, Opalvision and DCTV – so that processed images can be viewed at top-quality if one of the supported cards is attached to the host Amiga. Additionally, if you need to use video equipment fitted with General Purpose Interfaces (in order to record images as they are rendered) there is provision for GPI support – though you'll also require MacroSystemUS's optional 4-way GPI hardware. Unfortunately, I don't have any further details on this right now.

MultiFrame also extends the scope of one or two image processing operations a little further – including adding extra options to *Morph Plus*' Ripple operator.

There are also several novel processing combinations that don't exist elsewhere – for instance Fresco, a heady mix of Displace_Pixel, Median Filter and Convolutions, that produces the rather nice effect you can see illustrated above.

Unfortunately all these extras are hard-coded into the program and there appears to be no way of adding your own image processing recipes for batch-processing effects.

IN CONCLUSION

I'll stick with *ProCONTROL* for now. Spline-based control (which both

BEAT THE CLOCK

Always running short of time when it comes to heading up your video? Or perhaps you've never even thought about what a video clock could do for you? Well, for just £30 (plus the dreaded VAT) Zen's *VTClock* can save you lots of time and trouble.

For the uninitiated, I'd better explain just what a video clock is used for, and why you might need one.

CLOCKING ON

At the start of every professionally-made video programme there are usually several things that the casual viewer will hopefully never see, unless that is someone makes a a hash of their cueing job!

These are: a section of black, some standard colour bars, and an audio tone. All of these elements serve to check the output levels of the viewing or transmission equipment. There is also a video clock that serves several incredibly useful VT-related purposes.



Whilst deceptively simple in its appearance, Zen's* VTClock *has all the right features for video work.

One of these purposes is to convey information about the programme. This information includes its title, the names of the producer and director, the duration, the completion date and other relevant material.

Another purpose is to provide a cue and countdown clock in case the taped programme needs to be fed into a live television system, whether cable, or transmitted.

Recording such a clock onto tape immediately before the programme makes it easy for an operator to line the tape up so that the first pictures arrive right on cue.

At least that's the theory, regular TV viewers with a taste for the technical will often spot rogue VT clocks that have crept in unannounced and unwanted.

MAKING TIME

As anyone who has tried to make their own VT clock will tell you (and many Amiga videographers have doubtless tried) it isn't quite as easy as it looks. You can get close, but



The scratchpad pages can be used for making ident notes between clips recorded onto 'dump rolls'.

JARGON BUSTING

ARexx – a programming language supplied with all Amigas running version 2 or later of Workbench. With ARexx it's possible to write batch control scripts to automate the operations performed by many popular applications, including *Art Department Professional*.

Art Department Pro – an Amiga application that enables the user to manipulate images in a variety of ways.

Batch processing – taking many desired computing operations and automatically performing them all in one go, with a minimum of interaction needed from the user.

Morphing – an effect applied to one image so that its contents are transformed so that they approach the contents of another, "target" image. Morphing is most often applied over a number of frames, creating an animated transformation of the image.

24-bit – a 24-bit graphics card uses 24 binary digits to store each picture element, meaning that each element can have one of 16.7 million colours.

programs hail as major features) is all well and good, but the final test of any program is whether it does what you want it to do easily and at reasonable cost.

Right now neither *ADPTools Professional* nor *MultiFrame-ADPro* can adequately meet my batch-processing requirements. AS

E-mail Gary Whiteley as drgaz@cix.compulink.co.uk

SHOPPING LIST

ADPTools Professional £125.00
By: Earobic Digital Systems.
From: White Knight Technology,
PO Box 2395,
Waltham Cross,
Herts, EN8 7HQ.
☎ 0992 714539.

SHOPPING LIST

MultiFrame-ADPro £75.00
By: MacroSystemUS
From: White Knight Technology,
PO Box 2395,
Waltham Cross,
Herts, EN8 7HQ.
☎ 0992 714539.

CHECKOUT ADPTools Professional

Documentation
●●●●●●○○○○
Looks nice, but does little to help guide you through actually *using* the software.

Ease of Use
●●●●●●●○○○
Could be more straightforward, especially the file selectors.

Speed
●●●●●●●○○○
ADPTools seems slower than the competition, which is strange, since all the programs use *ADPro* functions to do their deeds.

Flexibility
●●●●●●●○○○
Some extras make life easier, but I'm sure there could be a number of useful improvements.

Value for Money
●●●●●○○○○○
As it currently stands £125 is way over the top for what this program has to offer, and how it provides it.

Overall rating
●●●●●●●○○○
A good start, but *ADPTools* is too expensive, too memory intensive and lacks the finesse to be truly called 'Professional' software. It's just not ready yet though, a deal more work is still required.

CHECKOUT MultiFrame-ADPro

Documentation
●●●●●●●●○○
Small but sweet, with several well-explained tutorials, it is heads-up in the documents stakes at least.

Ease of Use
●●●●●●●○○○
Not bad, but could certainly stand some improvement if the newcomer is going to stand a decent chance.

Speed
●●●●●●●●○○
There were not too many problems in this department.

Flexibility
●●●●●●○○○○
Only being capable of applying a single process on each pass is just one of *MultiFrame*'s drawbacks – but it is one that will limit its long-term potential unless it is improved pronto.

Value for Money
●●●●●●●○○○
While not gut-wrenchingly pricey, it must be said that the price is a bit too high for the current state of development.

Overall rating
●●●●●●●○○○
MultiFrame has real promise but requires further work to make it a truly worthwhile purchase.

VTCLOCK REVIEWED

unless you're a programmer with real TV experience under your belt then getting it right is rather like trying to find the Holy Grail.

However, a company called Zen Computer Services have managed this tremendous feat and they have packaged it in a simple-to-use (and rather elegantly copy-protected) program called *VTClock*.

For the techie, here's what's included in *VTClock*: Standard colour bars at 100%, 80%, 75% and 70% levels, a 1KHz tone, clock (adjustable to 30, 20, 15 or 10 seconds duration), adjustable black start (from minus 9 seconds to not at all) and fully editable Ident (identification) text.

In addition to this it is possible to add colour bars to the clock screen, display a full colour-bar screen, and toggle the audio tone on and off. You can also run a time code-style clock on screen as soon as the *VTClock* has counted down. You can also select any of five other clock or scratchpad pages and edit the text they contain to your taste. All of which most video editors will find useful, if not invaluable.

This last feature is actually rather handy, because it means that you could, for instance, have three custom Ident clocks ready to go at the touch of a button. You can also have three scratchpad pages that can be used to easily enter text pertinent to the current contents of your videotape. A couple of examples of this might be to mark up an edit source containing only sound clips or to preface individual video clips which may have been compiled onto a 'dump roll' for convenience.

VTClock can use any suitable font you may have on your system, including Colorfonts and Compugraphic fonts (if you have WB 2.04 or later). All of *VTClock*'s features are easily available via function keys but if you can't remember even these ten easy keys, then press the Help key and all will be revealed! Don't worry about losing your configurations either because all the current data will automatically be saved every time the program is exited, and reloaded upon startup.

Requirements: Any Amiga. A genlock and some video equipment would help too, as would a hard disk, though this isn't essential.

SHOPPING LIST

VTClock £35.25
by: Zen Computer Services,
2 Silver Birch Grove,
Swinton,
Manchester M27 5FZ.
☎ 061 793 1931

CHECKOUT VTClock

Features
●●●●●●●●●○
Not much missing, except the possibility of including your own corporate ID (though a custom service is available....)

Documentation
●●●●●●●●○○
The great thing about this program is that it is very easy to use – hence the manual is just four pages long. Is this a record?

Ease of Use
●●●●●●●●●○
Simple, straightforward. It is what any program should be in that it's dead easy to use really.

Value for Money
●●●●●●●●○○
Sounds slightly expensive, but try making your own version if you don't like this bargain price!

Overall rating
●●●●●●●●●○
Get *VTClock* if you want the best possible start to your videos. Not only will you learn some very useful information, you'll also have a good time using it!

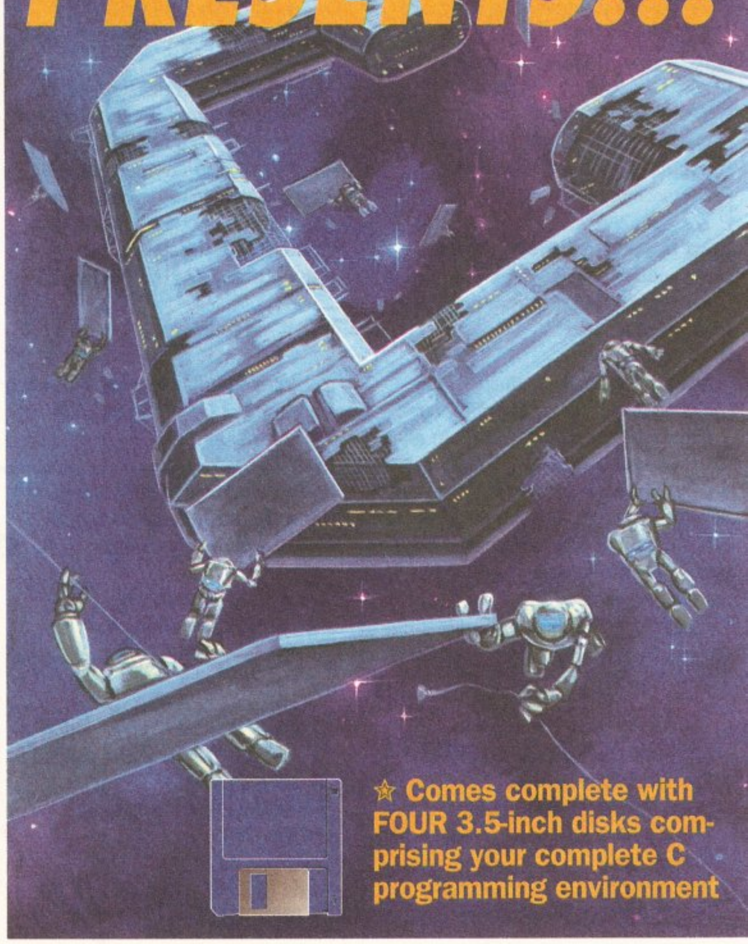
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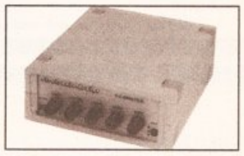
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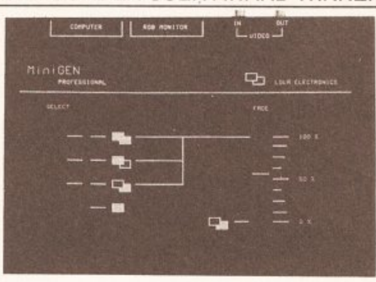
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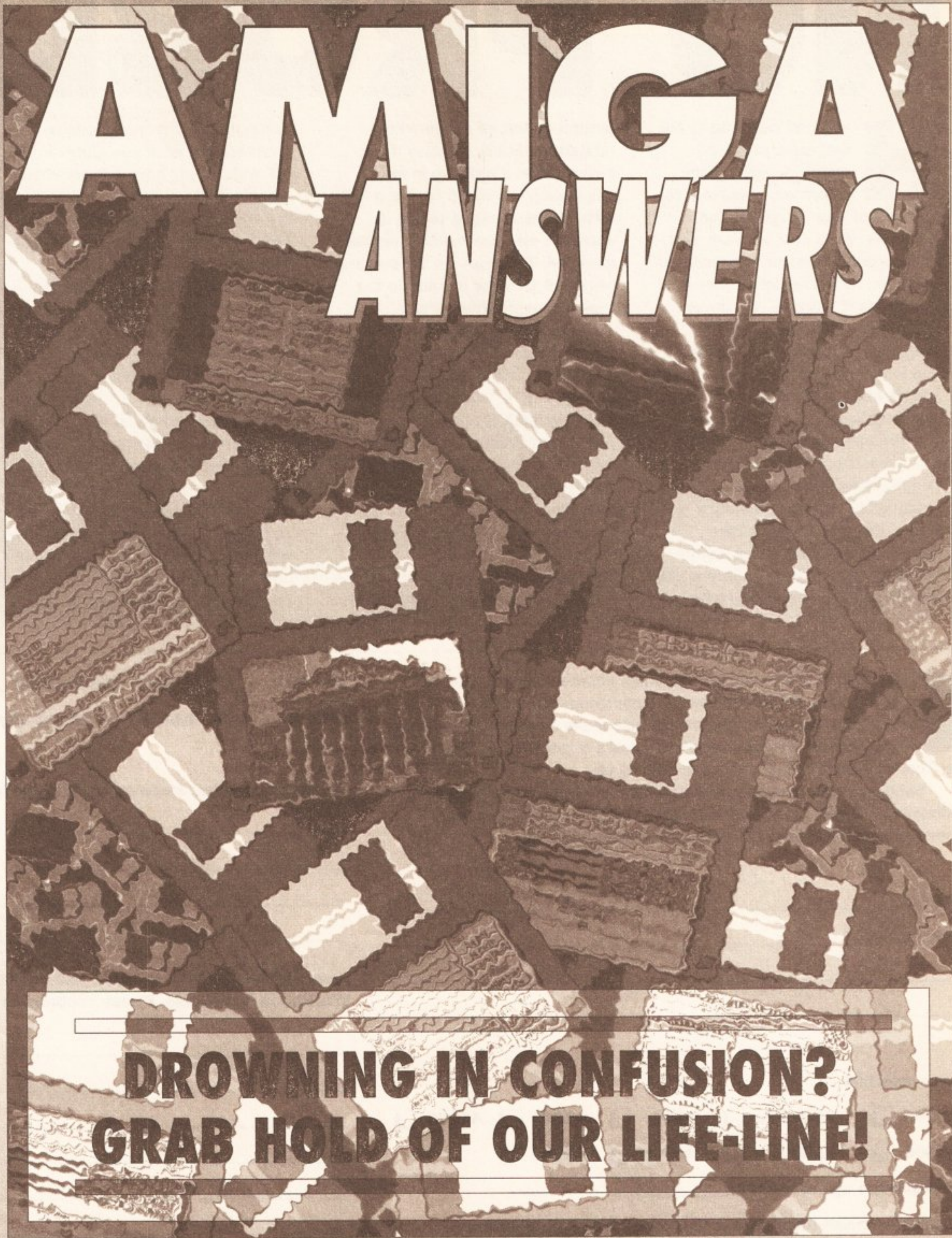
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NO PROBLEM!

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We draw on the services of a talented team of Amiga enthusiasts, all of whom are widely regarded as experts in their fields. **Mark Smiddy** is our AmigaDOS and floppy drive expert. **Jeff Walker** is our desktop publishing, fonts and printer correspondent. Then there's **Gary Whiteley,** an expert on video applications and graphics. **Jason Holborn** has mastered the intricacies of AMOS, and with his advice you'll be able to do likewise. Jason also has an encyclopedic knowledge of what's available in the PD world. If you have a query about comms then we'll set recent star of the small screen **Dave Winder** on the case. **Toby Simpson** is our code clinician. If you're experiencing problems with anything from C to assembler, try taxing his little grey cells instead. You'll find his special Code Clinic section – in which he removes the bugs from your programs – on page 46. **Wilf Rees** is a man with an education – well, an expert on educational software, at least. He's also got a jolly useful all-round knowledge of Amiga hardware and software. Last but by no means least is **Paul Overaa**, who will apply his intuition to any of your operating-system related programming problems.

So that's our batch of boffins – it's up to you to keep them busy. They thrive on your problems, so be sure to send them in. Remember, it doesn't matter how simple or complex they are – everyone has to start somewhere, so beginners shouldn't be afraid of asking for help, and even the most experienced Amiga user can get stuck occasionally. And if you've got any tips or hints to share with your fellow readers, then send them to us and you could soon be a tenner richer. Please mark the envelope "Tips" and send them to the Amiga Answers address specified on the form below.

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Kickstart version (displayed at the "insert Workbench" prompt)

1.2 ❑ **1.3** ❑ **2.x** ❑

Workbench revision (written on the Workbench disk)

1.2 ❑ **1.3** ❑ **1.3.2** ❑ **2.04/2.05** ❑ **2.1** ❑ **3.0** ❑

PCB revision (if known). Do not take your machine apart just to look for this! ________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) ________

Chip memory available (see AVAIL in Shell) ________

Agnus chip (if known) ________

Extra drive #1 (3.5in/5.25in) as DF__: Manufacturer ________

Extra drive #2 (3.5in/5.25in) as DF__: Manufacturer ________

Hard disk: ____Mb as DH__: Manufacturer ________

Extra RAM fitted – type, size in Mb and manufacturer ________

Details of any other hardware which could help us to answer your question:

____

____

____

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 35

HORSES FOR COURSES

DTP

I am in my final year at university and very much an Amiga novice. I have to do a project that must be word processed. I cannot afford a good printer myself but do have access to the university's laser printers. The university's computers run *Microsoft Word* 5.0 and 5.5, and *Word for Windows* 2.0, but these terminals are often very busy.

I would like to know if there is a word processor for the Amiga the files of which could be used with any of the above packages. I want to prepare the document on my single-floppy, 1Mb Amiga 500 Plus and then print it on the university's laser printer.

John L Gregory
Seamer
Yorks

With no second floppy drive and only 1Mb of memory you will have trouble doing anything productive on your Amiga 500 Plus, let alone word process a whole project. The computers at the university will have the necessary resources – upwards of 8Mb of memory and a large hard drive each, or maybe one shared via a network. The Amiga also needs resources, even though it doesn't actually come with very many. An external floppy drive and a 2Mb memory expansion, which is the minimum you need to even think about using the Amiga productively, are going to set you back £200-£300. Then you'll need to cough up another £100 or so for either *Final Writer* or *Wordworth* 3, the only Amiga word processors that compare with the PC packages you mention. You may have to use the university's *Word for Windows* after all. ***JW***

IN THE PINK?

HARDWARE

When my Amiga tries to load something from disk, the Workbench screen moves up and down and the colour of the title bar flashes. Occasionally, I get a pink bar about a third of the way up the screen too. Other than that the computer appears fine.

W. Crowe
Stamford
Lincolnshire

This could be a problem with your monitor, but it is more likely to be the power supply unit (PSU load increases under disk access) probably in the Amiga itself. You could try changing Workbench to "PAL low-res" from ScreenMode Prefs but I suspect the fault is in the computer and it should be returned for repair. Send the PSU back too just in case. ***MS***

TABLET PUSHER

SOFTWARE

Can you help me locate a product? I am looking for a software driver for a PodScat PT3030 graphics tablet. I have tried a couple of companies in the UK but with no luck. I understand the item is distributed by HB Marketing as explained in your 'Product Locator'. However, I have tried to telephone HB Marketing on a number of occasions but with no success? Do you know of another company that handles the Podscat range of graphics tablets?

Paul Norris
Mooncoin
Co. Kilkenny

HB Marketing have unfortunately gone out of business and, as far as I am aware, no other company in the UK handles the Podscat range of graphics tablets (if anyone knows different, then write in and tell us!). All I can suggest is to contact Podscat themselves using the address or phone number published in the manual. Sorry. ***JH***

A TERRIBLE HOWLER

MUSIC

I have recently bought a Yamaha PSS-790 and am thinking of buying a MIDI interface to use with my A500 and *OctaMED Pro*. I've heard that there is a problem with the PSS-790 when using MIDI in that it echoes the messages that it receives. Does this mean that I can't use my keyboard for MIDI purposes?

M Nottingham
Bath

The PSS-790 does echo every midi message it receives at its MIDI-in connector straight through its MIDI-out again. When you have a MIDI interface connected to the PSS-790 via two MIDI cables, as per the usual sequencer fashion, this causes something that is known in the business as a 'MIDI feedback loop'!

You can use your PSS-790 with *OctaMED Pro* as a pure input source (just have the MIDI-out of the PSS-790 connected to the interface's MIDI-in) in order to record riffs. You can similarly use the sound circuitry of the PSS-790 when playing back *OctaMED* compositions (by having just the MIDI-out of the interface connected to the MIDI-in of your synth). What you can't do is have both leads connected at once unless you can eliminate the above mentioned feedback loop. There are a number of ways of doing this.

It can be done via the sequencing software by filtering out all input data except for the channel you are using. Some sequencers, such as *Sequencer One Plus*, provide an option specifically for this Yamaha problem – unfortunately *OctaMED* cannot do this.

An alternative is to use an external filter in the MIDI line (between the PSS-790's MIDI-out and the interface's MIDI-in connectors). This has to be set to filter out all messages except the channel you are playing on with the sequencing software set so that it does not re-transmit the incoming data on the channel being used (which would cause a feedback loop)!

Philip Rees (0608 811215) make units for doing this sort of channel-selective message filtering stuff but at the moment this is a custom order facility only (it costs about £70). Another possibility is the *Forefront Technology Patch Commander* available from BCK Products (0708 448799) at £79.99. This is actually more of a MIDI diagnostic and control too but it does offer message filtering facilities. Do however check with BCK about suitability because it has been a while since I have seen this particular unit I am a little hazy about its exact filter capabilities. To solve the PSS-790 problem any filter must be able to remove all messages except those on a specified and user-selectable channel! I must admit that while the above techniques do solve the echo problem they are not solutions that I'd use. To be honest my remedy would be to cut my losses, get rid of any synth that had this type of echo problem and get one that didn't! ***PAO***

CATCHING UP

HARDWARE

I am planning to upgrade my Amiga 500 Plus to an A1200 with 120Mb hard drive. I want to do a lot of desktop publishing work with *PageSetter* 3 and would therefore like to increase the amount of RAM I have. Can PCMCIA cards with, say, 4Mb of RAM be used as permanent memory expansions? Or are they really designed to be a sort of 4Mb disk – to store data to take to another machine I mean? If they can be used as a pure expansion, is there any loss of speed while they are being accessed?

How can the GVP A1230 accelerator have a maximum of 32Mb of RAM when most other trap-door fitted boards can only achieve about 8Mb or 9Mb?

What is the "real time clock" available with trap-door Amiga 1200 expansions? Can I assume it is not a "tell the time" type of clock like the Amiga 500 expansions had?

I will probably get the Desktop Dynamite pack when I buy my 1200. Am I right in thinking that Wordworth V2-AGA will enable me to use the built-in fonts of my Canon BJ-10sx?

Ryan Cartwright
Chigwell
Essex

You can certainly leave a 4Mb PCMCIA RAM card permanently in the slot, thereby giving you an extra 4Mb of RAM. But bear in mind that the 1200 is a 32-bit machine and the PCMCIA memory is only 16-bit, this means it won't be accessed as fast as a 32-bit RAM expansion in the trap-door. In fact, adding PCMCIA memory slows down the Amiga 1200 very slightly, whereas the addition of 32-bit memory doubles its speed.

Please think long and hard before buying a trap-door expansion that has room on its board for only 4Mb of memory. A total of 6Mb of memory may sound like a lot, but memory intensive applications such as desktop publishing eat that amount of memory before lunch.

A more sensible approach would be to buy a board that can have up to 8Mb of chips added. Because of the way the machine is designed, that's as much memory as you can add to the 68020-based Amiga 1200. By upgrading the CPU to a 68030 (by fitting the GVP A1230 for

JARGON BUSTING

Accelerator – a device which either includes a central processor like the Amiga's, or a more advanced one in the same range, but operating at a higher speed. An accelerator is useful for calculation-intensive applications, such as 3-D rendering.

MIDI – Musical Instrument Digital Interface is a standard devised by electronic instrument manufacturers, allowing a number of synthesisers to be controlled by a single keyboard or sequencer.

RAM – Random Access Memory, so called because any part of it can be accessed immediately, rather than having to search through from the start of memory to the point of interest. RAM is used to hold programs while they are being executed and temporary data that the programs are manipulating. The contents of RAM are lost when the power is switched off.

example) you can use higher capacity RAM chips. There's room on the A1230 for 32Mb of them, but the upper limit is much higher than this. In the case of the 1200 the limiting factor is the relatively small amount of space under the trap-door.

A real-time clock is a small amount of battery-backed memory in which the current year, month, day and time are stored and continuously updated. This provides applications with the correct time whenever the computer is switched on without the user having to type it in.

Lastly, yes, *Wordworth* v2-AGA will enable you to use the fonts in your BJ-10sx. ***JW***

NOT SO SPECIAL FX

DTP

After saving my Jurassic Epson FX-100 printer from a scrap heap and blowing away all the mouse manure I was left with quite a good machine considering its age and the commercial abuse it has taken.

But it is rather basic and I was wondering if I could upgrade it to near letter quality, add some fonts, and increase the size of its buffer memory, which only takes a few lines of text.

Tim Williams
Trenewydd Park
Gwent

You sure it was mouse manure you blew away, not bovine manure?

The only way to "upgrade" your FX-100 is to give it back to the mice and buy a more modern printer. ***JW***

COVER DISK DETAIL

HARDWARE

I find that a lot of your magazine's coverdisks will not run on my Amiga, or items on them won't run. I have returned disks, but replacements behave identically. The most common fault is the screen going blank, and the keyboard freezing. This happens with disks that state "All Amigas". Is my CDTV faulty, or do I need some fast memory? Would a switch to turn off the CD part be the answer? Also, I am told that when I am installing a virus checker, that "Workbench is full". What can I do?

David Whiting
Orton Goldhay
Peterborough

There are a number of reasons why some programs will not run on your computer. Some badly written software, while working fine on some Amigas will not run on some specific setups. The reason your screen goes blank (and I presume the CDTV resets as well) is that your machine is "crashing", which means that the program it's running has a bug or problem with it. Adding extra RAM may not be the answer but it will make a lot more applications (which need fast RAM) run.

The CD drive in your system takes up a little memory and this means that programs that would normally run fine on a 1Mb RAM system might be unable to run on yours because they are a few kilobytes short.

There is a PD program that enables you to switch off some of the CD associates and reclaim some memory – of course a switch may also help.

Beware and do be be warned however, that any modification of this kind will invalidate your warranty and check with someone qualified before trying it. ***TS***

CD^{32} LOVES A1200?

HARDWARE

I want to use CD^{32} titles on my A1200. I've heard rumours that the CD^{32} plugs into the bottom of the A1200 (the trapdoor) which is currently where my 4Mb RAM expansion is.

Can you buy a two-way adaptor from Commodore?

I read in another magazine that to use the CD-ROM on an A1200 you need a Kickstart 3.1 ROM chip fitted to the inside of the computer. I understand that doing this invalidates the warranty.

So would it be a better idea to buy a CD^{32} and a floppy disk drive if I wanted to transfer software on to my A1200?

Calum Douglas
Helensburgh
Scotland

No, you can't buy a twin trapdoor adaptor, not from anybody. Why do you want to transfer software to your A1200? Not bootlegging? No one in the universe admits to that one. The trouble is that, to transfer a whole CD on to an A1200 will require approximately 1,200 disk swaps. If you real want to do this then you're bloody mad! ***PM***

24 FOR 500

HARDWARE

I have an Amiga 500 Plus and I've recently become interested in ray-tracing. I now feel the need for more colours. What would you say the best 24-bit graphics card is for my machine? I've been thinking about DCTV but a while back you said there would be an A500/A600 version of OpalVision. If this is now available how much is it, and is it any good? My ray-tracing package is *Imagine 2*.

James Allard
Crediton
Devon

James, to be brutally honest with you, your current A500 Plus (2Mb RAM, no hard drive) really isn't going to get you very far in the ray-tracing game, especially if you wish to produce 24-bit images.

I say this from experience.

An average 24-bit ray-trace can easily take up to a megabyte of RAM on its own if you want to work in hi-res. Rendering it on a plain A500 will take ages without an accelerator (though if you have plenty of time that's really no problem – leave your Amiga on overnight).

Then you have to store the image somehow. You could run a program such as *Rjpeg/Djpeg* that would compress it into JPEG format so that it will fit more easily on to floppy disk, or you could render it in HAM format (though this option doesn't solve your need for more colours).

Unfortunately there's no sign yet of an external OpalVision – possibly because the new HAM8 capabilities of the Amiga 1200 make the production of such a card more of a commercial gamble for the companies concerned – so I'm afraid there are only a few limited choices for you just now. DCTV is OK, but its video output (should you need it) isn't of the highest quality, though an S-VHS version is available. There's also *AVideo-24*, which is also pretty good, though it isn't easy to get hold of nowadays.

If you really want to make serious inroads into ray-tracing I think you'd be better off buying an Amiga 1200. Even then you'd need to add some more memory to it and possibly an FPU (Floating Point Unit, also known as a math co-processor) and a hard drive, instead of buying a 24-bit card. The HAM8 output of this machine is almost as good as 24-bit. Plus, if you render your Imagine images in 24-bit (*Imagine 2* doesn't support AGA modes) and convert them to HAM8 (using a program such as *ImageFX*, *ADPro* or *Rend24*, the shareware program available on ***AS***34's cover disk) then you'll have both a pretty good display and a capable Amiga that will take you much further into the future than your present Amiga 500 Plus can.

I know this probably isn't the answer you were looking for, but to my mind its a better option for you than buying a 24-bit card for your A500. ***GW***

AMOS'N'ICON

CODING

I have written my own AMOS program. How can I load my program without having to load AMOS first ?

Please explain.

Secondly, how do I give an AMOS program an icon ?

I have my program code on a disk with IFF pictures for my program (made with *Deluxe Paint III*). However, when I load up my Workbench and display the contents of the disk, the only icons I see are those for the IFF picture files. I have not compiled my programs so I'd be grateful for any information you could give me.

Austin Walters
Mid Glamorgan
South Wales

Producing stand-alone AMOS programs depends entirely upon the version of AMOS that you own. If you're using Easy AMOS for example then I'm afraid it's not possible.

If, on the other hand, you're using either AMOS Classic or AMOS Professional then fortunately you're in luck... bundled with AMOS Classic is a runtime only version of AMOS called RAMOS.

This will enable you to run your programs completely separately from the main AMOS program and, what's more, you can even give out copies of your program to friends and family providing none of the actual AMOS System files (minus RAMOS, of course!) are included.

JARGON BUSTING

Kickstart – the most basic and central part of the Amiga's operating system. These days it is held in ROM, so that it is immediately present when the machine is switched on.

Ray trace – a means of drawing a three dimensional picture where objects are specified as geometrical shapes with definable surface textures. Light sources can be placed at will in the imaginary area. The Amiga then draws the scene by tracing the possible straight-line paths of light from these sources to the objects and using the laws of optics to calculate refelctions and shadows.

24-bit graphics – the Amiga uses between one and eight binary digits to store the colour of each pixel of a display. This means that between two and 256 colours can be displayed. Hardware add-ons can use 24 bits per pixel, giving a possible 16.7 million colours.

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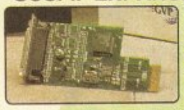
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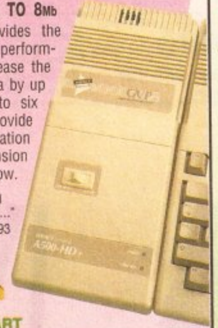
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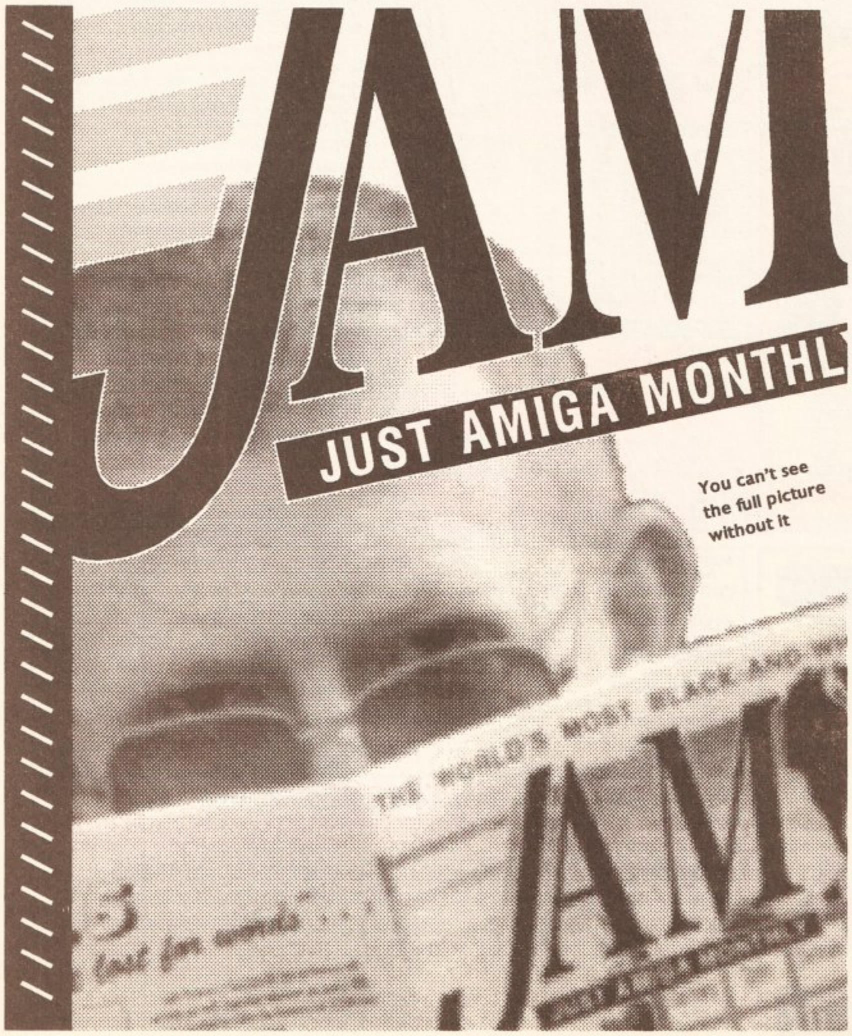
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AMOS Pro uses a slightly different method that gives pretty much the same results. Simply backup your AMOS Pro System disk and delete the following files.

AMOSPro.Editor
AMOSPro.Editor_Config
AMOSPro.Monitor
AMOSPro.Monitor_Resource.

Once you've done this, copy across your AMOS program and rename it **AutoExec.AMOS** and it should load and run whenever your machine is booted from this disk.

If AMOS is not automatically creating icons for your programs, then it sounds as if you have switched this option off from within the AMOS configuration program.

Simply load this file into AMOS and turn on the **Create icons for AMOS programs** option and AMOS should then save out icons whenever you save your AMOS programs. It's all very simple really. ***JH***

MBX-UK

HARDWARE

I have had my A1200 for 6 months, and although I did fit an MbX 1200 with FPU and 4Mb of RAM, this did not speed my computer up by much, so I have sold it.

I am looking for something faster. I use all sorts of programs, and I have just sent off for *Imagine* 3, and I use *Sculpt Animate 4D*.

I do not know which one to get, which is the best of the M1230XA with 50Mhz 68030 or the GVP A1230 with a 40Mhz 68EC030. What does the EC stand for?

Chris Carrigan
Crewe
Cheshire

Assuming the RAM you added was on the MbX card, and not on a PCMCIA card then it should have made your machine run about twice as fast.

An FPU (Floating Point Unit) would help any floating point application such as those you are already using and those you want to use. If you want to get real performance then you will need to add a faster processor such as the two boards you mention.

Both are excellent products. The MicroBotics board comes with a clock and its 50Mhz 68030 will be faster than the 40Mhz one, it also has an MMU (memory management unit). However, unless you do a lot of development work, or want to run *GigaMem* (which enables you to use part of a hard drive as extra memory – handy for rendering operations) there is not much use for the MMU.

The GVP card is cheaper, because it uses the EC version of Motorola's processor. And, because you asked, EC stands for Embedded Controller, but think of it as a cut down 68030. It does not contain the MMU part and therefore costs less. ***TS***.

BOOTIFUL

HARDWARE

When I switch on my A1200, my hard disk never boots straight away. I get the screen image of a floppy disk going into the drive. If I reset the machine (Ctrl and two Amiga keys either side of the spacebar) then it boots fine. What is the problem and can I fix it? I am an electrical engineer, by the way, but I find *HDToolbox* a bit obscure.

Oh yes, whenever I run *Monkey Island*, the graphics are all jumbled up. How do I cure this?

D McFarlane
Watford
Herts

Almost certainly the hard drive is not ready to boot before the Amiga gives up on it and goes for a floppy drive boot. The simple reason reason for this is that it takes longer for some hard drives to spin up to operating RPM than others.

To cure this, just fit a bigger capacitor on the A1200 reset circuit to give your hard drive a chance to get up to operating speed. It's the poor people who don't know how to use a soldering iron (but who find *HDToolbox* a doddle) that are up the creek. As for *Monkey Island*, you have to use the Display Options to select ECS before you boot your hard drive. Just hold down both mouse buttons at start up. Yes, I know its a pain, but the only other alternative is a PD program to select ECS after you've booted. I've never seen one but I dare say they exist. Maybe. ***PM***

BOOT PROBLEMS

GENERAL

I recently installed a Power Computing PC1204 4Mb RAM expansion in my A1200 and I'm very happy with the boost it has given my machine. However, any selections I make on the 'StartUp' screen (accessed by holding down both mouse buttons when the machine is reset) regarding chip set, cache, boot device etc, now seem to be ignored and the machine boots from partition DH0: using the AGA chip set and the cache enabled.

This is inconvenient because I have a number of installed programs that need the older chip set and/or the cache disabled (flight sims seem to be the worst offenders). I know the cache can be controlled with the 'CPU' command, but what about the chip set? *KillAGA* doesn't seem to do anything!

I can boot the machine with a pre-3.0 installed floppy and this automatically selects the ECS chip set, but I then have to execute a script that assigns everything over to DH0:. Likewise, if I try to boot up some non-DOS format game disks, the ECS will be enabled but the cache will also remain enabled, often causing the copy protection to guru. Any ideas?

Secondly, Commodore have stated that the CD32-compatible CD-ROM drive for the A1200 will not be useable with any other trapdoor expansions. Surely a fully buffered thru-port could be included in the drive to allow expansions to be plugged in there? Perhaps a third party hardware developer could rig something up?

Finally, any idea when the Workbench 3.0 ROM Kernal Manuals will be available ? After all, £100 is a lot to pay for out of date information!

Paul Johnson
Liverpool

I too have a Power Computing PC1204 installed inside my A1200 and I certainly haven't encountered the problems you refer to when booting from hard disk. It sounds to me that you may have something installed on your hard disk that stops the machine from booting up without the cache and AGA chip set enabled. If this isn't the case, then I have to admit that your problem is somewhat confusing. Why not try a copy of the program *Degrader*? – this may fix your incompatibility problems.

Commodore have indeed said that the new A1200 CD-ROM drive will not work with other trapdoor expansions and they seem unwilling to rectify this problem.

It appears that there are timing problems to consider – because trapdoor expansions require precise timings, any form of thru-port could create real problems.

I have spoken to a number of hardware manufacturers concerning such an upgrade and they claim that they are currently looking into the possibility to making some form of expansion 'chassis' for the A1200 that will allow two or more trapdoor expansions to be connected. It seems inevitable that someone will come up with the goods sooner or later – until we get further news, however, I'm afraid it's a case of wait and see.

The official 3.0 ROM Kernal manuals are still being prepared and I know for a fact that the *AGA Hardware Reference* manual is almost done. When they are released is unknown, but I would guess that we should see the first around March of this year. ***JH***

SHORT AND STRANGE

VIDEO

The GVP genlock (V1.16) will not start up while the smart card is connected. All is OK when the card is disconnected. I have tried various priorities on the genlock (from -5 to +30) but to no avail. Do you have any ideas please?

A Green
Hainault
Essex

Sorry – what smart card? Do you the Amitek RAM expansion? And by GVP genlock I suppose you mean the G-Lock? If you don't supply more details about your setup than A1200, 6Mb RAM (2Mb CHIP, 4Mb Amitek) and 60Mb hard drive then what am I supposed to think?

If it is of any use to you, when I checked out the GVP G-Lock some time ago I had quite a few problems getting it going – both on a GVP-accelerated Amiga 2000 and on a standard A1200.

I must say I had far fewer problems on the A1200, though this was a vanilla machine (an A1200 just as it comes out of the box). Since you seem to be saying that the genlock works OK when the extra memory is not installed then it is

JARGON BUSTING

ECS – Extended Chip Set is the name given to the versions of the Amiga's custom chips, present in the A500 Plus, A600 and A3000, which handle graphics and sound.

FPU – a Floating Point Unit is a chip that will work in conjunction with the CPU to carry out complex mathematical tasks. Carrying these out in hardware rather than software greatly speeds up the running of certain programs, particularly those that make use of 3D graphics.

Genlock – a way of slaving one video source (eg Amiga) to another (eg video tape) in order to synchronise their signals to allow stable wipes, mixes and other effects including overlay between the two sources.

Hard drive – like a floppy drive, but bigger and faster. The disk can't be removed, so once it's full, delete excess files or get another one.

more than likely that there is some conflict between the genlock and the RAM card.

Instead of trying to answer this question directly myself I think you'd be better advised to talk to your dealer, explain the problem and see if they are willing to let you swap kit on a trial basis.

Because this is probably unlikely (unless it is a very trusting dealer) then your next option is to call Silica Systems (081-309 1111), because they are the UK distributors for GVP products, and they also sell Amitek expansions. Ask to speak to the technical department and explain the problem in as much detail as you are able (which better be more than you've given me).

If you're lucky they'll have come across this problem before – which I have to admit is more than I have – and will hopefully be able to put you straight. ***GW***

OPTICAL DELUSION

BUYING

I'm tempted to get Power Computing's 20Mb Floptical disk unit as I need a removable disk system. Where do I get the disks from and how much do they cost?

I own a bare A1200, and the only versions of the drive advertised are an external A500 model and an internal A2000 model. I know it's a SCSI drive, but do all SCSI devices work with all SCSI controllers? I'm only asking because my old floppy drive didn't work with my A1200.

Sean Eaton
Surbiton
Surrey

You can get the blank floptical discs directly from Power Computing, who are more than smart enough to be able to supply blank disks for their own drives. Be warned though that prices can go up and down fairly quickly, so you're better off phoning Power Computing first before placing an order.

Yes, well, most SCSI (Small Computer System Interface) drives work with most SCSI controllers. However there are a very few exceptions to this rule (aren't there always?), such as the multiplay Pioneer SCSI CD-ROMs. SCSI is a much tighter standard than Commodore's floppy disk

Incidentally, the A1200 floppy fiasco wasn't really CBM's fault – third part suppliers cut corners to boost performance.

One thing that does fool people about SCSI though (and here comes a useful tip heading over the horizon), is that the all the drives in the SCSI chain need to have their resistor packs removed, all of them except for the last device in the chain that is. If you don't do this, then the drives will still work, but will fail to operate consistently. ***PM***

VISION OFF?

GENERAL

Perhaps you can help me? I have *AmigaVision* version 1.53 (rev G) which I use on an Amiga 1500 fitted with 3MB of RAM. Since the company that I purchased the software from no longer exists perhaps you can answer the following questions for me?

1. Is there an *AmigaVision* helpline or user group? I cannot find anyone else who can help me!
2. Will this particular version colour cycle in HAM? I cannot make it do so, though it cycles OK in 16, 32 and EHB modes.
3. Is there a later version available? Does this colour cycle in HAM? Can it control any consumer video recorder (eg using the Panasonic FS90 or FS200B)?
4. Is there a package on the market that has similar functions to AmigaVision and will colour cycle in HAM and control consumer VTRs?

Dave Unreadable
Truro
Cornwall

To answer your second question first I dug out a copy of *AmigaVision* (which just happened to be the same as yours, 1.53, Rev G).

Before I loaded it up I used *Deluxe Paint IV* to make some colour-cycling HAM screens and saved them. I used these as tests for *AmigaVision* and had no trouble at all getting them to colour cycle. I take it that you are using Gfx to set the colour cycling order and adding a delay so that there is enough time to see the image and commence the cycling? I've included a screen grab of my test presentation to give you a bit more of an idea of what I did.

In regard to questions 1 and 3, I have no idea about either of these. An extended version of *AmigaVision* has been due for some time (I think it was going to be a professional version) but I've not heard much about it for some time.

Perhaps your best bet is to call Commodore (since they were developing *AmigaVision*) and see if they can help you.

As for your last question, yes, there are other programs around that provide the functions that you're looking for but which could cost quite a lot more than *AmigaVision*.

I'm thinking of a combination of the newly-released *Scala MM300* (see the review in next month's issue) and Scala's new *Echo EE100*

CODE CLINIC

CODING

TOBY SIMPSON BATTLE WITH THE AMIGA O/S IN A READER'S DEMO

Author:	**John Whittle**
Program:	**Direct Blitter Access**
Language:	**68000 Assembly**
Fault summary:	**Corruption of the Workbench screen.**

This month's problem is quite fun (well it would have been for John Whittle had it not kept making his life problematic – another reason never to think that a program is finished just because you've written the last line on to the screen!).

John, the author, found it almost impossible to find a way in which the fault that caused Workbench to corrupt every so often could be easily reproducible – and this seriously interfered with the bug-hunting detective work. However, under some circumstances, when he quit from his program, the Workbench screen was slightly corrupted. Occasionally the system crashed when he tried to quit and, even more curiously, his program worked on his A1200 and not on his friend's.

Direct Blitter Access is one of those Amiga demo-style things with a pretty copper list, some bouncing graphics, a tracker tune and a scrolly text window at the bottom of the screen.

In order to perform its technical wizardry this program accesses the hardware registers directly. The catch is, that it does it in a very naughty manner which invites doom. The program does not disable multi-tasking and, because it does not tell the OS (Operating System) that it is about to use any of the hardware features, the OS will quite happily access the blitter thinking that it can. By some stroke of extremely bad luck this OS action can and sometimes does coincide with times that the demo itself was blitting something.

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

More serious was because the OS was still actually active, although you could not actually see the Workbench screen it was still there. Thus if you should decide to move your mouse around and then take to clicking a little then whatever was on the Workbench screen underneath the demo would be selected!

Sadly several commercial games which are "sort of" OS friendly are guilty of this problem as well – you can exit your game to find loads of applications open, windows all over the place, and potentially find extensive damage caused. Although unlikely, you could accidentally format a hard disk partition, for example. Playing with the Amiga hardware directly is a dodgy thing at the best of times and, in an ideal world, we would simply not have to do it.

Unfortunately there are situations where realistically there is no choice. The situations in question concern games for the most part, and of course, those whizzy demos. In these cases its important to decide how you're going to proceed.

You have two choices: one is to disable the operating system when you start. You then re-enable it at the end and just keep your fingers crossed that everything re-starts correctly. The other way is to work "with" the OS, and "ask" it before doing anything.

The key is *do not mix these two types*. If you're going to leave the OS running (which is infinitely preferable and leads to better compatibility in the future) you *must* tell the OS when you're going to be using certain hardware features.

These days there is no excuse and really no need to blow the OS out totally. You're just asking for problems, particularly with compatibility on multiple Amigas.

It was pretty easy to solve one of John's problems, for instance, the oddest one. His program ran on his A1200 but not on his friend's. His friend has a hard disk, and runs John's demo from a CLI window. His Amiga was almost certainly operating in an AGA higher bus-fetch, that enables the displaying of more colours than the older Amigas without slowing the machine down. Because John's program does not access the special register which controls this, then his demo attempts to run in the higher bus-fetch, which it can't, and the screen is corrupted. This is nice and easy to fix, all that is needed is a few lines of code to the beginning. Firstly, open the graphics.library and then do this:

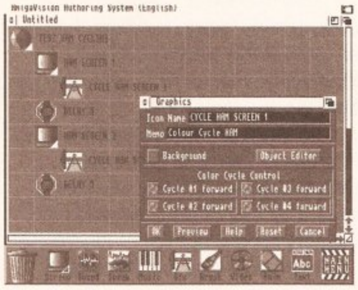
```
move.l      _GfxBase,a6
; Load graphics library ☛▼
base into A6
suba.l      a1,a1
```

domestic edit controller.

Other editing software, such as *Video Director*, may also be able to include cycled HAM images from a suitable source.

For more information on Scala call 0920 444294. Call Gold Disk on 071 4983275 for more in-depth advice about *Video Director*.

If any readers can help Dave with hints, tips and locations of *AmigaVision* user groups then write to *Amiga Shopper* and we'll see what we can do. ***GW***



AmigaVision: low-cost and not much support either. But is it any good?

MODEM DAZE

COMMS

I am thinking of buying a modem, maybe a Supra 2400. The trouble is a lack of information regarding their use. So, where do they plug in? Where do you get the phone numbers to dial? What should I expect to find – games or serious software? Any general advice would help too.

JR Howe
Clacton-on-Sea
Essex

Modulator/Demodulator units (Modems to you me and the BABT man) connect the serial port of most computers into the telephone network. In order to do this they have a 25-pin D-type connector to accept the Amiga end of the lead, and a telephone connector that plugs into a BT phone socket.

You only need one or two phone numbers of services, because usually they contain updated lists of other telephone numbers – you call up one to get a directory of others. PD demos often have telephone numbers to call as well.

Expect to find anything and everything, but you'll never find anything that's 100% finished. You will also need some communications software like the shareware *NComm 2*, a demo version of which is widely available through the Public Domain. And a modem cable, of course, to connect a modem to your Amiga's serial port.

Thanks for the free stamp – we never reply to SAEs, as it says in the small print. ***PM***

BLUR-O-VISION

GENERAL

I got a new TV with a SCART socket on it. When I connect up with Linxs Amiga to the SCART connector the pictures look OK but when I run *Kindwords 2* the requester windows and the text looks very blurry. Sometimes the same happens with *Space Quest III*.

However, not all the text in the windows appears to be blurred and if I use an A520 modulator I don't get these problems. So perhaps you can tell me why, when I use the SCART connector, I get the blurring on the requester windows?

Ian Saville
Eccles
Manchester

I'm sorry that I can't shed much light on this one, especially since you don't mention the make of TV. It has me baffled too!

All I can suggest is either trying another SCART connector kit or fiddling with the contrast and brightness controls of your TV to see if you can improve matters.

Otherwise contact the manufacturer of the TV or the dealer you bought it from and try to get some advice from their technical staff as to what the problem might be. ***GW***

A500 TO A1200

BEGINNERS

I upgraded my A500 to an A1200 just over three months ago, and I must say that it is an excellent machine. (But then you already know that don't you!).

At first everything worked correctly, but now I have a slight problem. When I boot up the machine, the screen is pushed over to the right somewhat, so I lose about 1cm of the screen area making the right hand side a struggle to read. This only happens when I am running Workbench, or a Workbench utility.

If I boot up with a game, then this problem seems to not be there. Things are worse when I am using a utility such as *Directory Opus*, where lots of important information is on the right side of the screen.

I was wondering if this is a modulator problem, or just my TV? If this is a problem with the modulator, I would be willing to buy a monitor. Which would you recommend?

Kevin Moore
Bushey
Herts

This could be one of a couple of problems. The first, and easiest is that you might have accidentally

CODE CLINIC CODE CLINIC CODE CLINIC

```
; Clear the a0 register
jsr        _LVOLoadView(a6)
jsr        _LVOWaitTOF(a6)
jsr        _LVOWaitTOF(a6)
; Give time for VDU to be ☛▼
cleared
```

This calls **LoadView** with a **NULL** input parameter. The effect of this is to force the operating system to shut down its display, and revert to the old ECS 1x bus-fetch mode. **WaitTOF** means "Wait for top of frame", and the pair of them have the effect of ensuring the **LoadView(NULL)** completes before you access the hardware registers. Just adding these five lines made John's program at least run on my A4000 machine, when previously it would not.

The other area of great problem was the interrupt access. John was writing the address of his new Vertical Blanking routine directly into **$6c**. And, while on most Amigas this actually works, there is no guaranteeing that the vertical blanking (Level 3) interrupt is actually *at* **$6c**, indeed, on some of our office machines it is not. Also, this means that any essential OS level 3 interrupts will now not get processed, as you are stealing them all. There is no need to access interrupts in this way. The correct procedure is to use **AddIntServer**:

```
move.l interrupt_VERTB,a1
lea int_VERTB_Name(pc),a0
move.l a0,LN_NAME(a1)
; Set server name.
move.b ☛▼
#NT_INTERRUPT,LN_TYPE(a1)
; Set type.
move.b #127,LN_PRI(a1)
; Set priority.
lea Vertical_Blank(pc),a0
move.l a0,IS_CODE(a1)
; Set address.
moveq  #INTB_VERTB,d0
SYS    AddIntServer
; Add the interrupt server.
```

In this case, our vertical blanking routine is at **Vertical_Blank**, and might look like this:

```
Vertical_Blank:
; put our code here
      moveq     #0,d0
      rts
```

Note that we use **RTS** and not **RTE.** Putting 0 in d0 at the end means that the other OS interrupts will still work. If we'd have set this to any other value, then our interrupt would have ended the entire chain of interrupts to be processed.

In the setup code above, the address **interrupt_VERTB** simply contains a pointer to a clear allocated **Interrupt** structure, and **int_VERTB_Name** is a null terminated string containing the name of our interrupt, perhaps a little like this:

```
int_VERTB_Name:
dc.b   "Our_VB_Interrupt!",0
```

The name you give the interrupt is entirely up to you. We're setting a priority of 127 so that our interrupt gets called first. 127 is the highest you can set the priority to. Th priority value runs from 127 to -128; where 0 is "normal" and -128 is "Service me last". Adding this new interrupt code in made the program run on every machine I could test it on, but there was still one problem, which lay with the blitter access.

Before you use the blitter, if the operating system is still running, you need to call **OwnBlitter**, a routine in the graphics library, and when you've finished, you need to call **DisownBlitter**. Also, instead of trying to write your own "Wait for blitter to finish" program routine, always use the one stored in graphics.library, **WaitBlit**, because its just as fast, and works on all blitters known to man, and will work in the future also. Here is an example of a little code I changed:

```
; ... start of loop ...
jsr      wait_vb
GRA      OwnBlitter
GRA    WaitBlit
jsr    scroll_text
GRA    DisownBlitter
; more code...
```

GRA is a macro which calls the named graphics.library routine. Firstly, John waits for the vertical blanking gap to begin and then updates the scroll-text using the routine **scroll_text**. Before calling this I call **OwnBlitter**, and **WaitBlit**, the latter just to ensure that the OS's last blit is finished. With this, and **OwnBlitter** added on the graphics-bouncing routine, all appeared to work OK, and I couldn't crash it. If you need more info about interrupts and the blitter, its worth looking at the *Libraries, Edition 3 ROM Kernal Manual* for the Amiga.It's worth its weight in gold.

Here are the details: ISBN 0-201-56774-1. It costs around £30.

upset your preferences. Look at your **Overscan** settings. To see them double click on the *Overscan* program in the **Prefs/** drawer on your workbench. Try selecting the PAL monitor and editing the text size. You can drag the screen around using the the handles on the screen and re-adjust it. Consult the Workbench manual for more information.

Alternatively, you might have edited your startup-sequence and made some changes. This could force the Amiga to open the AmigaDOS window before it has read your preferences, which could result in an incorrect display. You should never edit your **startup-sequence**, but edit the **user-startup file** instead. If you have made changes then simply recall the correct one from your original disk.

To be honest with you, buying a monitor would be the best idea anyway because you'd get a much superior display and be able to run additional screen modes with larger resolutions and no flicker.

Incidently, the modulator problems with the A1200 were to do with colour generation and resulted in unstable displays with strange interference. This problem was fixed at a very early stage. ***TS***

KICK THE CLICK

BEGINNERS

I have recently bought an Amiga A1200 with a 40Mb hard drive and a second floppy disk drive.

May I, through your magazine, enquire whether there is a program available which can control the incessant whirring of the hard drive and the clicking of the floppies when they are not in use?

It would be ideal if the Amiga's function keys could be programmed on boot up so that I could switch the hard drive and floppy drive on and off as required.

Mr J Dunn
Canterbury
Kent

I'm afraid there's no way of reducing the whirring sound that your hard drive makes short of parking and then unparking the drive each time it is required. The only problem with this is that very few IDE hard drives can be parked through software, so I'm afraid you're stuck with the whirring sound.

As for your floppy drive, a software patch called *NoClick* is available from the public domain that switches off the click caused by the Amiga's disk autosensing hardware.

Just give your friendly PD supplier a call and they will be able to advise you on which PD disk you need. Once *NoClick* has been installed, the Amiga drives will operate perfectly normally but without that horrible clicking sound. ***JH***

TALKATIVE AMIGAS

Could you please advise me whether there is any way that I can connect together two A500 Pluses so that I can firstly 'bop' my dad at flight sims and secondly so that I can access the files on his hard drive and he can access my A570 CD-ROM drive ?

His Amiga is downstairs in his radio room and mine is upstairs in my bedroom.

Anon
Anonshire
England

You're going to need two leads for this job, I'm afraid. Firstly, you'll need a null modem cable that will enable your flight, sims running on two separate machines, to talk to each other. These cables can be picked up for around £8, or you can quite easily make one yourself

And here's how to do it... just get two 25-pin serial connectors and solder a wire between pin 7 on both and then two more wires which cross from pin 3 and pin 4 (pin 3 on the first connector goes to pin 4 on the second and vice-versa).

To be able to share devices such as your father's hard drive and your A570, you're going to need to buy special networking software. The best value networking package that I've seen is *AmiNet* which comes complete with a single interface, all the necessary cables and software to enable up to 253 machines to communicate with each other.

AmiNet not only enables you to load files from other machines, but you can also use it to share a printer between two machines. You'll have to buy two packs, however – one for your machine and another for your father's machine. Each *AmiNet* pack costs £59.95 and is available from Meridian Distribution on 081 543 3500. This may seem expensive, but it's about the cheapest networking system available for the Amiga! ***JH***

MULTI-CHOICE

BUYING

Please could you answer some questions that I have on data transfer and processing speeds. Your answers will hopefully help me to decide whether to purchase a GVP A530 or a SCSI 2 hard drive. I own an A500 with a 68020 processor and 4Mb of 32-bit RAM and an A590 hard drive (SCSI).

1) If a hard drive transfers data at 1Mb/sec can a 68020 CPU receive data at that rate?

2) Assuming a CPU can be measured in this way, how many Mb/Sec can a 17Mhz 68020 and a 40Mhz 68030 receive?

3) Which will run faster:

My current setup with a 160Mb SCSI drive

or

A GVP A530 with 4Mb 32-bit RAM and no FPU?

4) I read somewhere that an A530 was not as fast as an A4000/030. Is this true? If so, how can a 40Mhz 68030 be slower than a 25Mhz 68030?

5) Will a SCSI 2 drive work on a standard SCSI interface? If so, will there be a speed difference over a standard combination?

6) Will an FPU speed up data compression with programs like *PowerPacker*?

I use my computer for music and DTP/word processing.

Simon Crawt
Guildford
Surrey

These are difficult questions to answer, particularly on the Amiga, because a number of factors effect the speed at which the CPU (Central Processing Unit) is able to go.

I could easily write a whole article on the subject (And I'd need to in order to explain it properly!) but I'll try and answer most of your questions in one go.

In theory, a 68000 CPU running at 7.14Mhz uses 7.14 Millions of cycles per second.

Therefore, if reading a memory location took the processor 1 cycle, as long as the memory is fast enough, it is able to read 7.14 million words/sec.

Because processor instructions take a number of cycles to execute, this all adds up to under 1-Million Instructions Per Second (MIPS) on a 68000 processor.

This performance gets hit further if the display hardware on the Amiga is working hard as is the case with a 16-colour screen for example on a non-AGA computer.

My Amiga 3000 drops from 8.9 MIPS to under 6.5 MIPS when I switch from a 8-colour to 16-colour interlaced screen. If your hard drive interface is not a DMA (Direct Memory Access) drive, then the processor has to read the data from the drive itself and, assuming that the program will comprise quite a few instructions, we're down to well under 500K/sec at this point.

Another factor to consider is that the Amiga multi-tasks. This means that when it does multi-task, other tasks will affect that processor speed even further. If you were running on a 16-colour screen, well, you'd be down to 100K/sec if you were lucky.

On the A590 without your accelerator, you'd get about 150K/sec normally and, under some conditions, much less.

Adding Fast RAM solves most of the screen performance problems because real Fast RAM's performance (as opposed to the A500 trap-door RAM) is not affected by screens with lots of colours.

Decent hard drive interfaces (and this means most modern ones), such as the GVP drives, are DMA units. This means that they transfer data into your Amiga's memory without the processor itself having to read it.

This method of computing is considerably faster. However there's an even better way: if the drive interface is able to DMA into your 32-bit RAM, it's faster still.

So long as the processor is able to process this data fast enough, then the speed is pretty much only limited by that of the drive and the memory access speed.

The 32-bit AGA A4000/030 machine will run faster than the 40Mhz 68030 on your 16-bit A500 because all memory, including the Chip RAM, is 32-bit.

In addition to this, the AGA chipset does not impinge on the performance of the graphics memory so intensely when dealing with screens with lots of colours.

If you are going to buy a SCSI-2 drive you need a SCSI-2 drive controller. Although the drive would work fine with SCSI, the advantages of SCSI-2 would not be used.

For the sort of things you do on your machine, the A530 would be a good solution because it would speed up all operations.

The GVP units are very well built and are very fast. Also, you can add an FPU at a later date which will speed up any floating point operation such as those used in ray-tracing, art packages and DTP to name a few.

If you're interested in the raw performance of the 68000 series processors, you can buy data manuals from Motorola (the designers and builders of them) from most large book-shops. ***TS*** AS

JARGON BUSTING

SCSI – Small Computer Systems Interface is the standard used for connecting hard drives, CD-ROM drives and tape back-up units to computers.

Startup-sequence – a script which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from , and may be customised by those who have unusual hard or software requirements.

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❑ ^ + **V490 MESSY SID v2.0** Reads MS-Dos disks, Transfer any text files to & from an IBM PC, ie PC to Amiga
❑ ^ + **V523 DICE C COMPILER (2)** Matthew Dillons full featured powerful C compiler & environment system. Complete C language
❑ ^ + **V536 CATALOGUES** A collection of utilities used to Catalog all your disks/ Video tapes and audio tape collections **(2)**
❑ ^ + **V573 FILE & HD** HDClick v2.0, File Minder, DosControl, & tools. **(2)**
❑ ^ + **V575 HOME BUSINESS** Based on word processing, Data Management, Spreadsheets, Accounts & Printing. **(6)**
❑ ^ + **V583 ICON EDITOR III v2.0** Create Icons upto 640x200. Edit or Create
❑ ^ + **V610 GOLF SCORES v1.84** It will record each round you play & Store it
❑ ^ +> **V611 FOOTBALL LEAGUE v1.1** Want to update your teams league position.
❑ ^ + **V620 ASPICE v3.2** Full featured program for electric circuit.
❑ ! - **V635 IBeM EMULATOR v1.5** Is a CGA Colour IBM-PC Emulator for Amiga.
❑ ^ +> **V660 HOME MANAGER** Is an addressbook,inventory database, 2-do list
❑ ^ + **V661 VERTEX** Create 3d objects without using the X, Y & Z views. Loads Sculpt 3d+. Now also contains Sci-Fi fonts
❑ ^ + **V662 DCOPY v3.1 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy
❑ ^ + **V678 DRAW MAP v4.1** You can generate world maps in detail views. 3d or 2d ❑ 2Mb **(2)** or ❑ 1Mb V263
❑ ^ + **V681 GAMETAMER v4.59** Get a hold of that extra hard game with a cheat
❑ ^ + **V685 ASTRO ASTROLOGY v3.5b** Best Astrology program on the Amiga
❑ ^* **V690 WB 2/3 UTILITES** Contains the programs that should have been with WB 2.x Take full advantage of the many NEW capabilities that are available. **(2)**
❑ ^ + **V693 HARLEQUIN VIDEO ART** A video production with backgrounds **(3)**
❑ ^ + **V698 AGRAPH v2.0** Brings the world a cheap draw Bar, Line, Area & Pie chart production/ presentation program.
❑ ^ + **V710 AREXX TUTORIAL** Includes several samples of Arexx scripts & some sample programs. ARexx comes free on all Workbench v2.x and better machines.
❑ ^ + **V711 UNIX** Working demo of Minix a Unix) based System which is call campatable
❑ ^ + **V719 FREECOPY v1.8** Removes protected games copy protection so that the user can install them on HD.
❑ ^ + **V742 ONLINE v1.4** Program will allow you to find cheats within games.
❑ ^ + **F691 PROFESSIONAL C MANUAL v3.0** Is the largest collection of utilities, documents & examples for C, It consists of six manuals, with over 40 chapters **(5)**
❑ ^ + **V759 TEXT ENGINE v4.0** Up-dated version of the Word processor with **AZSPELL.**
❑ ^ + **V761 A-GENE v4.18** The most popular genealogy database program.
❑ ^* **V777 VOICE CLI v7.0** The idea is to control the CLI with your own voice.
❑ ^ + **V778 RAYSHADE v4.0** Is a complex Ray tracing package. 2Mb RAM **(3)**
❑ ^ + **V782 FORMS** Create, Edit, Draw , Colour & print your own forms
❑ ^ + **V783 PROGRAMMING TOOLBOX** Many programs to help in your development efforts (most C but some in basic).
❑ ^ + **V784 AREXX (2)** disks which contain Arexx programs & examples
❑ ^ + **V786 PASCAL** This disk contains everything needed to program in Pascal. Includes a68k 68000 assembler & more.
❑ ^ + **V787 PROGRAMMER TOOLS** GadTools to design your user interface to your own programs using all of Amiga DOS 2.0+s new features. Also RegTools.
❑ ^ + **V790 ANIMATION UTLS** Includes CyroUtils for splitting, combining, and creating animations from IFF picture files.
❑ ^ + **V791 DIRECTORY ULTS** Highly recommended programs which are designed to make CLI tasks virtually obsolete.
❑ ^ + **V794 GRINDER** Complete graphic conversion package that supports GIF, JPeg, Atari St (Neochrome / Degas), PCX, Targa, TIFF, Ham-E and IFF Format pics.
❑ ^ + **V799 ADVENCED UTILs** SerNet & ParNet, Connect 2 Amigas & share resources via serial or Parallel ports. MyMenu
❑ ^ + **V811 ELECTROCAD v1.42 & PRO TOYPER** Electronics drawing Programs.
❑ ! - **V817 A500 PLUS EMULATOR** As it sounds will let v1.3 / v1.2 owners run WB v2.x+ software WITH-OUT any need to purchase the Workbench v2.x chips.
❑ ^ + **V820 BBBBS v5.9** Baud Bandit bulletin Board System Ftures include up to 99 file libraries, interface to extra devices
❑ ^ + **V821 SNOOPDOS v1.5** Monitors Dos calls to see what library, devices, fonts are required if a program won't load
❑ ^* **V822 BACKUP v2.43** A Hard disk backup program that features, multi-drive support, full backup, compression.
❑ ^ + **V823 POWERPLAYER v3.4** Very powerful, user friendly module player.
❑ ^ + **V826 AHDM v3.4** Hard Drive Menu. When placed in your startup-sequence, offers a 16 page menu
❑ ^ + **V827 REPAIR-IT 2: NewZap v3.3,** Sector file editor. **FIXDISK v1.2,** Recover as much as possible from a defective disk
❑ ^ + **V841 MODULA-2** Contains modula-2 language on the Amiga.
❑ ^ + **V842 SID v2.01** Sid can be used for various operations, like file copieng, renaming, deleting, Moving, Formatting ect
❑ ^ + **V844 DELITRACKER v1.3** Powerful & system friendly music player. Will play over 40 difference types of modules.
❑ ^ + **V845 Q.M.J v5.31** Generate Julia sets & complex Quaternion Julia slices.
❑ ^ + **V858 MUSIC MAKERS** A selection of programs to produce your own music productions. Make your own music.
❑ ^ + **V859 AUDIO TOOLS** Sound and Audio production utilities **(2)**
❑ ^ + **V861 3d DESIGNER** Graphic production utilities including CLight, DKBTrace
❑ ^ + **V865 IMAGE PROCESSORS** Tools to perform wide variety of Image techniques
❑ ^ + **V866 MANDEL EXPLORER** This is the best collection of Fractal Generating software utilities on the Amiga **(2)**
❑ ^ + **V869 ANIMATION ASST** Will solve many of your animation problems. Includes ABridge, Players, DA, AnimTools **(2)**
❑ ^ + **V875 SPACE** Help you study, identify the Stars & celestial objects.
❑ ^ + **V876 SYSTEM TEST v4.1** Checks & reports on your computer
❑ ^ + **V888 TRONI CAD v1.0** The best CAD program with power functions.
❑ ^ + **V899 ABACKUP v3.88** A Powerful backup utility that may be used for HD backup & File Archiving. **SysInfo**
❑ ^* **V901 FIM v2.2** IntroMaker to create you own Intros. IFF imports
❑ ^ + **V924 PLOT MAP v0.85** An extra disk for use with Draw Map v4.0+ Will allow use of the program with 512K RAM
❑ ^ + **V928 THE LITTLE OFFICE** One of the best disks at the present time. Has a Word Processor and others
❑ ^ + **V936 LETTERS & BOILERPLATE** Letters for you to use as your own or cut & pause into a Word Processor
❑ ^ + **V942 SCREEN BLANKERS** A disk packed with screen blankers. Includes the Twilight Zone blanker along with 10 others
❑ ^ + **V943 LYAPUNOVIA v1.5** Mindboggingly colourful program that makes pictures from a mathematical formula. AGA support
❑ ^ + **V945 PROPAGE 3 ENHANCER** Over 40 Genies for use with ProPage 3.0, including useful ones like Make Pie Chart. Also structured clipart for unique borders!
❑ ^* **V946 SYSTEM OPTIMIZER** KCommodity gives you memory meters. REorg will optimize hard / floppy disks for big speed increase. HDMem virtual memory. 2 Meg of HD space for 2Mb
❑ ^ + **V947 GNUPLOT** Is a command driven interactive function plotter. Creates stunning plot/graphs of mathematical functions. Requires a hard disk drive
❑ ^ + **V948 INTUITION BASED BENCHMARKS v6.0** Contains all the popular BMs like Sieve,Dhrystone,Savage,IMath & Matri
❑ ^ + **V949 TESTS** Contains all of the classic speed tests and system checks we could find. Includes CPU Speed, A full featured system diagnostic tool & more.
❑ ^ + **V951 PROTECTION** is a collection of utilities aimed to protect your data and protect autobooting HDs & Document File. Lock your data files with a password
❑ ^ + **V952 x-BENCH v1.0 (2)** Complete solution to the replacement Workbench. Contains loads of usefull utls LastHope, View, Virus Checker, Power packer & DCopy2
❑ ^ + **V958 CLUB LEAGUE** Is a utility that will allow you to edit and keep track of your divisons/leagues stats within a club league
❑ ^* **V962 SUPER KILLERS v4.1 (2)** The latest Virus Killers like BootX v5.23b, Virus Checker v6.33 and VirusZ v3.14 should be able to kill those's nasty trojans & virus's
❑ ^* **V976 WB 2.0 UTLs 6** Heres another disk of WorkBench enhancement utilities
❑ ^ + **V977 HD UTLs** More Excellent utilities for hard drive and file editors at heart **(2)**
❑ ^ + **V979 NCOMM v3.0** Is a communications program based on Comm v1.34 with lots of very nice enhancements
❑ ^* **V980 KICK v1.4** Will down grade your A500+, A600 or AGA machines to run all that old software that would NOT normaly work. Turns them into a kickstart 1.3 machine
❑ ^ + **V983 MEGA CHEATS v3.0c** Now contains over 500 cheats.
❑ ^ + **V984 PROTRACKER v3.0a** The latest updated version from Norway, Various bugs fixed and well over 70 brand new features
❑ ^ + **V988 ZIPBENCH v4.0** Another Workbench replacemant but contains excellent utilities like, powerpacker v2.2a, powerplayer, SysInfo, VirusX, Archiver, b-Base, BootIntro, Degrader, Fist Aid Box **(2)**
❑ ^ + **V994 THE MONEY PROGRAM v1.5** Features include upto a maxium of 60 accounts, upto 50 direct paymenys,
❑ ^ + **V1000 GRAPHPRO v1.0** Written with Amos pro by David Jordan. Basically takes a set of data, plots them on a graph.
❑ ^ + **V1001 VMORPH v2.21** Will allow you to create smooth morphs/warps between two different images over a period of frames
❑ ^ + **V1002 RAMOS PRO v1.12** If you have Amos Pro then this disk will make your programs Boot without the program
❑ ^* **V1003 NICKPREFS** Is an enhancement to WB 2/3 which adds 3 new preferences WBPicture, BuzyPlonter & Floppy.
❑ ^ ^ **V1005 WB 3.0 UTLs** Contains the first batch of AGA utilities for WB 3.0 users
❑ ^ + **V1009 TURBO TEXT v1.1** Excellent Word Processor. Very impressiveversion
❑ ^ + **V1013 POOLS PREDICTION** Need a helping hand to win the Pools.
❑ ^ + **V1016 OCTAMED v2.1** Music editor which was designed for making music.
❑ ^* **V1017 POST v1.86** An excellent Postscript interpreter for the Amiga which implements the full Adobe language **(3)**
❑ ^ ^ **V1021 (AGA) SCREENS** Enhance your Workbench disks with backgrounds like these's. All pictures in full AGA colour.
❑ ^ + **V1022 LITTLE TRAVELLER v1.1** Shows a world map & you can select any country for travel information, Zooms up another close up map with more detail.
❑^ + **V1023 QUIZ** Contains Questions & Answers with the option to add
❑^ ^ **V1024 (AGA) MANDELSQUARE v1.6** Generate enhanced AGA set images, requires numerical coprocessor. You can create 256 colour coloured pictures
❑ ^* **V1025 TERM v3.4** Comm prgroam, Xpr transfer, filetype ident after download, cut & paste, point-and-click, auto upload/ download, VT102/VT220, Ansi emulation, powerfull phone book & AGA support **(3)**
❑ ^* **V1034 ADM v1.01** Flexible address database with loads of great features.
❑ ^ ^ **V1037 (AGA) A1200 WB HACKS** An excellent collection of Utilities & Hacks
❑ ^ + **V1038 AMOS PRO UPDATER v1.11** 1st Update to the Amos Professional
❑ ^ + **V1039 HARD DISK INSTALL** If you need to install your A1200 HD then you need this. Workbench 3.0 also requires disk V1075
❑ ^ + **V1040 bBASEIII v1.4** An easy to use, versalite, yet full featured database. Greatly enhanced successor to bBASE II.
❑ ^ + **V1041 DIGITAIL BREADBOARD** Full featured digitail circuit simulator
❑ ^* **V1043 SUPER DARK v1.5** A screen blanker like After Dark from the MAC
❑ ^ + **V1044 FANCY PRINTING** Banner, Graph Paper v1.2 and Disk Print v3.59.
❑ ^ + **V1045 uDRAW v1.0** Provides a mechanism for the rabid drawing of schematic diagrams. Bitmap oriented
❑ ^ + **V1046 THE XI RAVE SAMPLES** Grarett Watt's IFF 808 State samples
❑ ^ + **V1048 HAM-8 VISTAS** Collection of Ham-8 Vista drawings **(2)**
❑ ^ + **V1051 EASY CALC PLUS** A spread sheet designed to be both easy to use and fast. Built in excellent help system.
❑ ^ + **V1054 ADVANCED UTLS 2** Compress Disk doubles the capacity of your D on the fly with compressions Also DiskOptimizer, SCSI Mount and more.
❑ ^* **V1055 PARBENCH** All the software you need to hookup 2 Amiga's or CDTV's.
❑ ^ + **V1056 DEVELOPER** Contains the official Commodore developers Kit for the Amiga Guide & install utilities.
❑ ^ + **V1057 EDPLAYER** Music MOD player that looks, acts & plays like a CD
❑ ^ + **V1058 3D GRAPHICS** Several 3d moddeling/ray tracing programs
❑ ^ + **V1059 GRAPHICS** Create stunning graphical images. MPath creates swirling galaxy images. Roses, Rayshade
❑ ^ + **V1060 CIRCUIT BOARD DESIGN** Includes mCAD v1.26 and several terrific routines for the electronic enthusiast.
❑ ^ + **V1061 DISK UTLS** Several highly recommended programs for performing file hard drive backup, file recovery, disk track recovery, and forced disk validatuion
❑ ^ + **V1062 DESKTOP PUB** Transfers Macintosh screen fonts .AFM metric files to Amiga fonts/PPage .metric files.
❑ ^ + **V1063 RIPPERS, STRIPPERS & BEATS** For the music enthusiast, design-ed to strip music from your favorite games
❑ ^ + **V1067 3D OBJECTS 3** About 20 objects in Sculpt / Turbosilver format
❑ ^ + **V1069 PRINTER DRIVERS 5** Desk-jet 550c, 500, 500c, Ricoh HP1200, Canon BJ300, 130, LPB, 10e, PJ1080a HP Paintjet.
❑ ^ ^ **V1070 (AGA) UTLs 2** 256 colour icon editor,Plamsa256,QuickGrab v1.1
❑ ^ ^ **V1071 (AGA) MSM v1.8** Martins system monitor for programmers
❑ ^ ^ **V1072 (AGA) WINBLENDER v39.28** Create excellent/stunning AGA fractals. Also contains 68030/040/FPU versions.
❑ ^ + **V1073 FT-X ACCOUNTS v2.01** Was written as there are not ready any other good account packages.
❑ ^ ^ **V1074 (AGA) UTLs 3** Collection of AGA Based utilities. Includes Kill AGA Which allows you to run old badly written programs incluing demos & some games
❑ ^* **V1077 GENEALOGIST v3.04** Is a specialized database for keeping track of genealogical information. Full featured & a wide selection of features to use.
❑ ^ + **V1078 PC TASK v2.03** Software IBM-PC emulator. It allows you to run the majority of PC software with no additional hardware. Now supports VGA, EGA, CGA and MDA.
❑ ^ + **V1079 KEYBOARD TRAINER v1.1** Best Public Domain Typing Tutor. Excellent
❑ ^ + **V1081 REPAIR-IT 3** Contains a selection of Disk, Hard Drive repairing and file saving utilities for the Amiga.
❑ ^ + **V1083 CROSS v5.1** is a program that creates crossword puzzles for you
❑ ^ + **V1084 SPECTRUM EMULATOR v1.7** This is the best & latest version of the most popular emulator for the Amiga. There is an 020/030 versions now on the disk which enhance the games on disk. **(2)**
❑ ^ + **V1087 STOCK ANALYST** Technical analysis and securities tracking program which calculate when to buy & sell shares
❑ ^ ^ **V1088 WB 2.0+ UTLs** Contains ChkFrag, DFC5, FastDos, Formatter, No-Click, UnDelete, KeyMac, MegaWB, MR, 1 Plane, OpenL, ResumeMaker & StarBlank.
❑ ^ ^ **V1090 ANDYS (AGA) UTLs** Another selection of utilities for A1200 owners also encludes FakeMem, KillAGA, AGATest, Degrader and much more.
❑ ^ + **V1091 ASTRONOMY v2.1** A menu driven astronomy program that calculatoes information about the Sun,Moon, Planets and Constellations. New updated version
❑ ^ + **V1092 HEROQUEST AID** Will aid solo AD&D players who do not have a Dungeon master at the present time. It takes over the DMs role. Good or what.
❑ ^ + **V1093 PARNET SET-UP** A two way network file system between two parallel ports, establish via two amigas. **(2)**
❑ ^* **V1095 THE DEGRADERS** If you have trouble running software on an A1200 or A4000/030/040 give this disk a try it will emulate the basic 1.3 rom better that any other software on the Amiga at present.
❑ ^ + **V1096 MING SHU CHINESE ASTROLOGY** Will create a horoscope in seconds not hours. the complete aid.
❑ ^ + **V1097 TITANIC CHEATS v1.40** Contains 950k of raw data which is just a whisker under 600 games.Well presented
❑ ^ + **V1101 RJ UTLs** This disk contains helpful image processing and painting programs. Like Perfect Paint v1.34, Image Workshop v1.3, an IFF Manipulator.
❑ ! * **V1102 DT UTLs** Contains Border for WB v2.04+ machines, MakeKickFile, SKick v3.34, is a replacement for kick-it, Z Kick and LKick kickers. It will softkick any other version of kickstart into ram.
❑ ^ + **V1103 TEK-ATAK MODULES** An excellent helping of wonderful music for your own productions or to listern to.
❑ ^* **V1104 COLOURED ICONS** Transfer your disks into colouful well presented works of art with this database.
❑ ^ + **V1105 VIEW TOOLS** Contains Convert, ViewTree, a Familt tree easy to use database progra. ViewPhone, an Britsh telephone storage database. ViewDisk, is a small disk catalogue utility.
❑ ^ + **V1106 MAJOR LEAGUE** Allows you to keep track of your favorite teams and there results. DataIndex v2.4
❑ ^ + **V1109 STAR VIEW** Is designed to show graphicallythe positions of the stars and planets from any point on Earth.
❑ ^ + **V1110 FORCASTER v2.01b** Is a Horse Racing prediction program which uses statistical analysis of Major factors.
❑ ^ + **V1112 CHEQUE BOOK v2.5** Record your bank and other transactions.
❑ ^ + **V1114 PRINT LABELs** DocDump2.1, Envelope Print v1.2, Inlay Maker v1.4, MC master v1.1, Banner Press, Label Print v3.5
❑ ^ + **V1116 POOLS WIZARD JNR** Deadacated Amiga Football Pools predicter.
❑ ^ + **V1117 x-BEAT v1.2** A good program for drum sequencing 16 bass.
❑ ^* **V1121 SHAYERA'S TOOLS** Contains IFF2RAW, MatchRun, NoClick, PlayMelon, SetStar, TrackPlayer v1.92
❑ ^ + **V1123 DIGITAL DREAMS UTLs** Contains Trax, ProMax, trax Map, Titans cruncher, Protect, VC, Scrabble II, Boot Block Champ II and File Profect.
❑ ^ + **V1125 LEMMINGS 2 INSTALL** This disk will install Lemmings 2 to your hard drive. 1Mb Chip RAM + 512k RAM
❑ ^ + **V1129 RED DRAWF TRIVIA** The ultimate Quiz and answers game.
❑ ^ + **V1130 COMMUNICATE v1.2** A helping tool for learning one of the eight formats of cummunications or languages
❑ ^ + **V1133 NUMPAD v37.3** Emulates a numeric keypad on some Amiga Keys.
❑ ^* **V1134 TOOLMANAGER v2.1 (2)** Includes the ability to add menus to your Tools menu. add WB icons or Windows.
❑ ^* **V1136 DISK UTLs 2** Copy_CA tool for making backup copies, formatting ect. DiskMate A multi drivedisk copier. Disk Salv 2 Disk repair, salvage & undelete utl. HDClick, HD menu & workbench tool.
❑ ^ ^ **V1137 (AGA) UTLs 4** Test, BBlank, CheckAGA, CycletoMenu, Doublex, Force VGA, GIF Datatype, PKLudge, PPShow, Rend24, ViewTek & Verlauf
❑ ^ ^ **V1138 (AGA) UTLs 5** Degrader, Pov-Ray, AmigaToDouble, CardMemLast, Palette, Promotor, RomTagMem.
❑ ^ ^ **V1139 (AGA) UTLs 6** A4091Patch, Alert Timer, Bestid, Clouds, Ham8 JPEG, NewPOP, NTSC4NTSC, PatchPointer, Plasma PCX & Screen Mode changer.
❑ ^ + **V1140 FOOTBALL FORECAST** v1.2 This is the latest and most upto date football results prediction program. New instructions
❑ ^ + **V1141 MANDELPLOT v2.4** Does't just produce 2d fractals, can view them in 2d or 3d modes, make animations, even design your own fractals. Fastest mandel-brot producer (5 seconds on an A500).
❑ ^ + **V1144 GRAPHICS** Contains JPEG files,DJPEGGui v37.1,MakeAnim7,BestAGA anim playback. S-Anim-5 v1.1, S-PIC v1.2
❑ ^ + **V1145 MENUMASTER III** If you want to produce a simple menu system this is it wether for a hardsk or floppy disk
❑ ^ + **V1147 EASYBENCH** Contains a wide selection of utilities which covers almost all the best utilities on the Amiga **(2)**
❑ ^ + **V1152 GOLDED v.94** A GUI Based editor with lots of functions/options (about 250), DICE compiler front end, OS3 look & functions, folding paragraphs, fully customizable menus, Hotkeys, Autobackup, Insert columns, Clipboard & more. **(2)**
❑ ^ + **V1154 MAGIC MENU v1.27** Replaces all Intuition menus, supporting both pull-down and Pop-Up menus. Menus can be displayed in a 3d look.
❑ ^ + **V1155 PHXASS v3.3** A complete macro assembler which supports all important Motorola processors.
❑ ^ + **V1156 VIDEO TITLER** Can you generate professional looking TV titles and credits for you oun videos. Well you can with this, It has outstanding abilities like very smooth scrolling, colour slides (AGA support) and use of colour fonts. See Flectcher Fonts
❑ ^ + **V1160 NOSTROMO CHEATS v1.1** The best adventure solution disk ever made with over 500 arcade cheats.
❑ ^ + **V1161 GOALKEEPER v1.0** Computer soccer administration program, Create your own Mini Football leagues upto eight teams, Fit for the European, UK leagues.
❑ ^ + **V1162 AMIGABASE v1.31** A programmable database, features include 2 display methods, filter datatypes, search, print, string, memo text, date, time, Data only limited by memory size.
❑ ^ ^ **V1164 ASI A1200 FIX DISK** Contains all what you would need for getting disks to work on your new a1200 computer.
❑ ^ + **V1175 UDM v3.0** Do you want to produce a utility disk of your own, well this disk will put you on the right track to do it.
❑ ^ + **V1177 BETTERBENCH** Yes its another intresting Workbench utility disk packed 99% full of utilities and documents
❑ ^ + **V1178 KICKSTART 3 EMULATOR** This disk is a multi kickstart selection utility disk, You can select Kickstart 1.3 (34.005) Kickstart machine (as it is) Kickstart 3.0 (39.106) No AGA support but a superior Workbench ect.
❑ ^ + **V1179 FILE-O-FAX** Designed for you to work at your own leisure without worrying about forgetting those important meetings, or names, address, tel Number's ect.
❑ ^ + **V1184 AMIGA DIARY** Is a mouse driven diary capable of storing all persion events and is the solution to those forgotten birthdays, missed appointments ect.
❑ ^ + **V1185 GENIE** Is a new genealogist database which will keep track of info.
❑ ^ + **V1196 DESKTOP VIDEO** Is a disk with making and editing your very own video master pieces. Contains excellent software
❑ ^ + **V1200 MAGIC WORKBENCH** Is a selection of icons or items to enhance your Workbench screen and enviroments.
❑ ^ + **V1207 OCTASTUFF** A new collection of utilites come samples come modules for use with the famous OctaMED programs
❑ ^ + **V1208 OCTAROCK** A selection of rock orientated modules and samples (OctaMED)
❑ ^ + **V1209 GNU C++ COMPILER** Requires: HD (6Mb+ Free Space) These's disks consists of the latest version of the GCC environment, Thus the compiler, driver, assembler, linker, header files inline code generation of library calls. **(3)**
❑ ^ + **V1213 PROGRAMMING** This contains the Programming languages like, Ace, AmigaE, AmigaEdo, SBProlog, BCPL4AMI, EGUI, Pascal and others **(3)**
❑ ^ + **V1219 THE AREXX GUIDE** Full AmigaGuide document to teach you Arexx!! Tip filled with easy cross referencing.
❑ ^* **V1220 TERMINUS** Modem/Terminal program. Full featured scripts/screen modes/overscan, all the popular protocols.
❑ ^ ^ **V1221 (AGA) BLANKER** BlitzBlanker for WB v3.x only it has 14 different blankers all ready to show off your AGA machine!.
❑ ^ + **V1222 PANASONIC STUDIO** Special printer Preferences editor and driver system for all Panasonic 9 & 24 pin printers.
❑ ^ + **V1223 CANON STUDIO** Special printer Preferences editor and driver system for BJC 800&880, LBP A1, A2, BJC 800, BJ5, 10, 20, 200, 230, 300, 130.
❑ ^* **V1224 SUPER VIRUS KILLERS** From Safe Hex Int'l, who catalogs and kills Amiga Trojans and Viruses worldwide comes a complete virus protection system.
❑ ^ + **V1226 AMINATION & PAINT** Contains a collection of Utilities like Direct Action, Movie the amination player, QuickFlix a slideshow and cel animation, FrePaint & FunPaint a professional Paint program.
❑ ^* **V1227 GADTOOLs** Contains a collection of sharded libraries intended to provide programmers with new GadTools
❑ ^* **V1228 WB 3.0 UTLs 7** Contains another excellent helping of new utilities for WorkBench 2.0 and 3.0. Enforcer, A tool to monitor illegal memory access. Assign Manager, A new pref editor. AssignPrefs, PickStartUp, Allows you to select a startup-sequence of your liking. StickIt, A computer replacement for the ol' Post-It note.
❑ ^ ^ **V1229 (AGA) MAIN ACTOR v1.16** A modular anim package with many features, IFF-Anim 5/7/8, IFF AnimBrush, PCX, playing from Hard disk or play in a window. **(2)**
❑ ^* **V1231 HD SOUND UTLs** Contains Sound, SoundMachine, QuadraComp An intuition based music tracker that uses the internal sound capabilities of the Amiga. HD_Frequency, Is a HD recording system with many features, rates 60khz on A1200s.
❑ ^ + **V1235 BLACKBOARD v1.0** Is an image proccessor written specifically for the AGA chip-set machines. will load ILBM (IFF), Sculpt files, you can also shade, colour, Crop, Scale, Mapping, Edit, Rectangle, Change range also various Palette routines.
❑ ^ + **V1236 INVOICE PRINTER** Will print invoices onto your letterheads. Much sort after. Ideally suited to a small business.
❑ ^ + **V1237 SUPERSPELL** A global spelling checker for use in any program you are typing under. Has a 9,000 word dictionary which you can edit, add, replace ect.
❑ ^ + **V1238 KICKSTART SAVER v2.0** Functions include load disk df0:, df1:, load file, kicksum, makekick, save file ect.
❑ ^ + **V1239 SKICK PRO v3.43** is the replacement for Kickit, ZKick, and LKick ect. Intended for use on KS2.0 machines and its task is to soft-kick any other version of kickstart into RAM. Enhanced KS3.0 features.
❑ ^ + **V1240 SHOW STD v1.2** is a tool that can be used to show the area covered by a particular STD code on a map on the UK. Flying Toasters, is a screen/mouse blanker.
❑ ^* **V1241 THE PD OFFICE** is a little collection of wonderful utilities like EdWord-Pro, AddressBook, EasyCalc ect.
❑ ^ + **V1242 RE-ORG v3.11** Is a fast shareware disk optimizer for AmigaDOS.
❑ ^ + **V1243 IMAGE 2.0 OBJECTS** Volumes 4 to 7 packed to bursting point of Images for use with that amazing program Image. **(4)**
❑ ^ + **V1247 TEXTURE MAPS** in 320x200 JPEG format for use with any rendering progras, textures like Organic, Miscellaneous, Stone, Wood ect. **(3)**
❑ ^ + **V1250 SOLDERING** Contains many useful tools for drawing good quality circuit diagrams, and also vero-board (strip board/ solder board) lay-outs. complete PD system.

GAME DISKS

❑ ! - **1073 TETRIS ORIGINAL** This is the closest game to the original tetris
❑ ^ + **1420 DTRIS** If you want a 1 or 2 player Tetris this has to be 1 of them.
❑ ^ + **1749 SCRAMBLE** Original that old classic game from the arcades
❑ ^ + **1977 POM POM GUNNER** Shoot down world worl II air planes in this Operation Wolf style type game.
❑ ! - **2018 JETMAN** Spectrum classic on the Amiga with all the original sounds.
❑ ^ + **2022 SEA LANCE** The first Silent Service type sub war game on PD
❑ ^ + **2054 ATIC ATAC** A rendition of the game from the original Spectrum
❑ ^ + **2164 DUNGEON ON NADROJ** This is the best D&D adventure type game.
❑ ^ + **2220 STRATEGIC GAMES** Eternal Rome, Lords of Hosts, In Moonshine.
❑ ^ + **2221 MIND GAMES 21** of the best games to challenge your mind
❑ ^ + **2272 BLACK JACK LAB** Play all the popular versions of Pontoon
❑ ^ + **2278 CARD SHARP** Very well presented selection of solitaire games.
❑ ^ + **2280 DIPLOMACY 2Mb** Classic strategy game loosely based on World War
❑ ^ + **2411 TOTAL WAR** Strategy world conquest type game. 1 or more players
❑ ^ + **2432 GOLDEN OLDIES** Galaga, Galaxian, Space Invaders, Asteriods, Batty & Missle Command the Classic selection.
❑ ^ +> **2447 COINDROP** Fruit Machine simulator with various gamble modes.
❑ ! - **2448 CRAZY SUE** Another first rate cute school girl platform game.
❑ ^ +> **2480 FRUIT MACHINE 2** As near as poss to the Arcade machines
❑ ^ + **2491 LEGEND OF LOTHIAN** Excellent adv game in the vein of Ultima.
❑ ^ + **2498 AMOS CRICKET** Excellent arcade cricket simulator with nice graphic
❑ ^ + **2614 TETREN** is a 1 or 2 player Tetris. The 2 player game is Head 2 Head.
❑ ^ + **2617 GOLDEN OLDIES 2:** Croak, is a 1 or 2 player Frogger. BiPlanes is 1 of the most additive games we've played here. Trail-Blazer, as the C64 Classic. Scamble.
❑ ^ + **2620 DR MARIO** You must move coloured pills down the screen.
❑ ^ + **2621 ETERNAL ROME** Start the Roman Empire from 32BC. Build fleets, armies & attack other counties and armies.
❑ ^ + **2622 DONKEY KONG** Platform game in which you must rescue the girl.
❑ ^ + **2676 MORIA v5.4** Loads of new features, better graphics, larger, graphics, dungeons, screen updates, overview of dungon's map, more monsters ect..
❑ ^ + **2724 NEIGHBOURS** Is the best graphical adventure game to date **(2)**
❑ ! + **2738 AIR TRAFFIC CONTROL** Try to guide upto 100 planes into the AirPort
❑ ! + **2802 CARD-O-RAMA** Sea heven, Crib Klondike, Black-jack, Spades, Street .
❑ ^ + **2825 ALL ROUNDER** A Cricket simulation with great graphics & play
❑ ^ + **2854 SPACE INVAIDERS II** A revised old classic Space Invaiders game.
❑ ^ + **2864 FIGHTING WARRIORS** A karate combat fighting contest game.
❑ ^ + **2932 NUMERIX** Enjoy puzzles then this is a must. You have a scrabble board & you must place tetris blocks to get points.
❑ ^ + **2987 BOMB JACKY** A conversion as the original Bomb Jack, it's as the best
❑ ^* **2988 BALDERS GROVE** its here Boulder dash with a selection of levels that work fully on Workbench 2. or higher
❑ ^ + **3037 SSW** A game for 2 based on Space Wars but with many extra features.
❑ ^ + **3039 ASTEROIDS II v0.85** The best version of Asteroids i have ever seen, If you like Asteroids then this is for you.
❑ ^ ^ **3040 TETRIS (AGA)** If you like tetris, you need this disk. AGA graphics.
❑ ^ + **3075 18 HOLE GOLF (2)** The first excellent golf game.Theres fully selectable speed & power functions combined with surpub graphics top a great game.
❑ ^ + **3162 SON OF BLAGGER** This is a classic C64 platform conversion Can you remember how active it is to play
❑ ^ + **3214 UNIV CONQ** A strategy game where 2 human players battle for control of the universe. Status information is continually updated to allow the player to concentrate on strategy. digitized pictures
❑ ^ + **3234 SYSTEM DEFENDER** If Defender is the game and this is the game for you, in true defender style it retains all features.
❑^ + **3235 ALIEN BASH** The game is set inside a prison for the galaxys mentally unstable, you have been imprisoned there along with a bunch of your mates. Rescue your friends by shooting
❑ ^ + **3252 BONDMINE 12** A well produced game in the vain of the classic Boulder Dash games.
❑ ^ + **3253 OPERATION METEOR** Set in 3d graphics in which you must travel around in a stunning adventure.
❑ ^ + **3265 WIBBLE WORLD GIGGY** Wibble World of Giggia Mainia hits town Yes you can enjoy the trills of controlling an egg shaped character for free. Solve puzzles avoid the monsters
❑ ^ + **3283 NECESSARY ROUGHNESS (2)** As headcoach you will have to call the playsthat you think will be most effective to the game. You will then be able to see the action, followed by a breif summary of what you have just seen. American Football
❑ ^ + **3285 THE ENTITY v1.1** You play the role or i should say control the stix and you're beinginvaided by the Entity.
❑ ^ + **3286 AIR HOCKEY** Is a bat and ball game based on air hockey from the amusement aracdes. 2 players.
❑ ^* **3287 ROAD TO HELL (2Mb)** Is an overhead view driving game like HotRod and super sprint. Theres a helping extra which can be bought from the shop like enhancedtypes, Better Engines, Rockets, Smoke screens ect.
❑ ^ + **3310 STARBASE 13 (2)** Is a graphical adventure, simular in style to monkey island or Operation Stealth. The controls and what they do are fairlty obvious.
❑ ^ + **3370 DIGITIAL TETRIS** Is a One or two player Tetris game with neat graphics
❑ ^ + **3371 SUPER PRIX** This is the closest variant game of Super Sprint on the Amiga
❑ ^ + **3383 POPEYE** Is one of my old fravs from the C64 computer. Very playable.
❑ ^ + **3384 BLOAD RUNNER** Remember that old classic game well here it is.
❑ ^ + **3397 SPACE INVASION** Another convertsion of Space Invaiders.
❑ ^ + **3401 JETTY QUEST** This game is a cross between QBert and Block It with makes it an excellently addictive puzzle game.
❑ ^ + **3411 KINGDOMS AT WAR** This is a 1 to 4 player Risk type game with neat and colourful graphics and presentation.
❑ ^ + **3412 THE LAST REFUGE** Is a Space invaiders variant set in the middle ages.
❑ ^ + **3413 DARKSTAFF** Is another classic game this one from the spectrum world
❑ ^ + **3414 CONQUEST & DOMINATION** An excellent stratergy war game in which you can battle with troops, Tanks, Guns, Planes, Bombers, Battle ships. Replace ammo, trains, tankers, Build buildings ect.
❑ ^ + **3428 CLASSIC TERIS GAMES** For all you out there with a fetish for Tetris games heres a little selection to keep you happy.
❑ ^ + **3434 MR MEN OLYMPICS** Heres a fast action joystick waggling game for all true Olpmpians or just crazzed Mr Men. **(2)**
❑ ^ ^ **3436 (AGA) MOTOROLA INVAIDERS** Its just another excellent AGA very large graphics space invaider type game. **(2)**
❑ ^ + **3465 ROBOULDIX** Is a action puzzle game with 32 colour graphics, over 500 different objects, and is a variant on the most excellent arcade classic BoulderDash.
❑ ^ ^ **3454 (AGA) KLODIKE (3)** Fancy a game of Klodike with AGA graphics.
❑ ^ + **ASS121 BRAINBOW** A board game, which will tax your brains for hours. Rather like a version of the pile-up Scrabble.
❑ ^ + **ASS123 ARTILLERUS II** Blow up your apponent with this one or two player game.
❑ ^ + **ASS127 SHANGHAI 93'** A brand new version of the old game calledDragon Tiles.
❑ ^ + **ASS138 SCORCHED TANKS** This is a enhanced version of Artillerus II with over 25 different weapons and upto 4 players.
❑ ^ + **ASS141 BLACKDAWN** Travel round a land in which hostile monsters roam free. kill the monsters with a section of weapons. Its a excellent dungeon master clone set in the future. Loads of extra features.
❑ ^ + **ASS143 INTENSE** is a Gauntlet stroke commando game in which you must walk up the screen killing the monsters, evil guys.

STAR TREK SELECTION

❑ ^ + ... **AT05 KLINGON D7 CRUISER** fires torpedoes while passing by **NCC-1864**
❑ ^ + ... **AT10 ENTERPRICES** Leaves the Star station dock. **NCC 1701-A** classic original
❑ ^ + ... **AT22 APPROACHING VESSELS**
❑ ^ + ... **AT23 STAR TREK FLEET MANEUVER**
❑ ^ + ... **AT33 THE PROBE II** & **BRID OF PREY**
❑ ^ + ... **AT34 LEAVING SPACE OFFICE** Docking, Attack mode, Bird of Prey Scout attacking.
❑ ^ + ... **1060 STAR TREK *: TNG** Game
❑ ^ + ... **1081 ULTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now in English
❑ ^ + ... **2222 STAR TREK TNG** This is the latest quiz game based on the T:N:G **(2)**
❑ ! - ..... **2501 STARTREK** /Jimbo Barber **(2) 2dd**
❑ ^ + ... **2503 STARTREK** Eric Gustafson **(3) 2dd**
❑ ^^ ..... **3420 (AGA) STAR WARS SLIDES (5)**
❑ ^ + ... **3453 THE NEW STAR TREK ANIM (2)**

* This Month's Best Mega Demo's *

1 ❑ ^+ 3468 .... Clairvoyance (7 Awards)
2 ❑ ^+ 3470 .... Totally Insane (Rage)
3 ❑ ^+ 3498 .... Music Disk (Transbeat)
4 ❑ ^+ 3511 .... Crayon Shinchan (Melon)
5 ❑ ^+ 3512 .... Asthetica (Icy and Chrome)
6 ❑ ^+ 3513 .... Dream Tripping (Digital)
7 ❑ ^+ 3514 .... Chit Chat Issue 11
8 ❑ ^+ 3515 .... Visual Intensity Issue 2 (2)
9 ❑ ^+ 3525 .... Rockily (Arise) (2)
10 ❑ ^+ 3527 .... Uquala (Damage)
11 ❑ ^+ 3528 .... Prosiak (Fying Cows)
12 ❑ ^+ 3529 .... Phaw (Scoopex)
13 ❑ ^+ 3531 .... Groovy (Lemon)
14 ❑ ^+ 3494 .... In The Mix Vol 5 (2)
15 ❑ ^+ 2858 .... Jesus On E's (LSD) (2)

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Any Two Hot List Titles

THE HOT L

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Silly Putty - 90%+ lots o
Elf/Toki/Puzznic (counts
Paperboy II ‡
Die Hard 2
Colossus Chess @
Challenge Golf
Battleships classic board
Graeme Souness Soc
Neighbours
Frankenstein ‡ @
Captain Planet
Silkworm Helicopter @
Tag Team Wrestlin
Edd the Duck ‡
Stack Up ‡
Lemmings 92% A
Round the Bend ‡
Fist Fighter
Sporting Triangle
World Cricket
Bart Simpson
Spiderman/Cptn Americ
Arcade Trivia
Xenon - C+VG Game of th
Blade Warrior - A Power, A
superb reviews
Arnie
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(counts as 2)

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Cracking the Shell

Mark Smiddy continues his discussion of the AmigaDOS screen editor, ED, and forges the links between Workbench and AmigaDOS

Last month I explained how the ED screen editor works and gave you some simple examples to try out. Now it's time to get a little more adventurous. First of all, let's consider the more advanced ED that comes with Workbench 2.

This has a special "command file" which it executes automatically every time the program is started. The command file, called **ED-STARTUP**, is loaded from the current **S:** assignment and usually looks something like this (only the first five lines are shown):

```
si 1 2 "Open... ESCop" "op ? ☛
/File: /"
si 2 4
si 3 2 "Save ESCsa" "sa"
si 4 2 "Save As... ESCsa" "sa ☛
? /Save As: /"
si 5 4
...
em
```

BEGINNERS — BEGINNERS START HERE — BEGINNERS

What is all this AmigaDOS stuff anyway?
AmigaDOS provides access to files and programs that would not normally be usable from the Workbench. It does this by accepting commands entered from a keyboard rather than a mouse. All disk-based operations performed by Workbench are done by Workbench making use of AmigaDOS's facilities, and therefore Workbench is a more protected and user-friendly environment. Until Workbench 2 came along many operations were impossible without reverting to AmigaDOS at some stage.

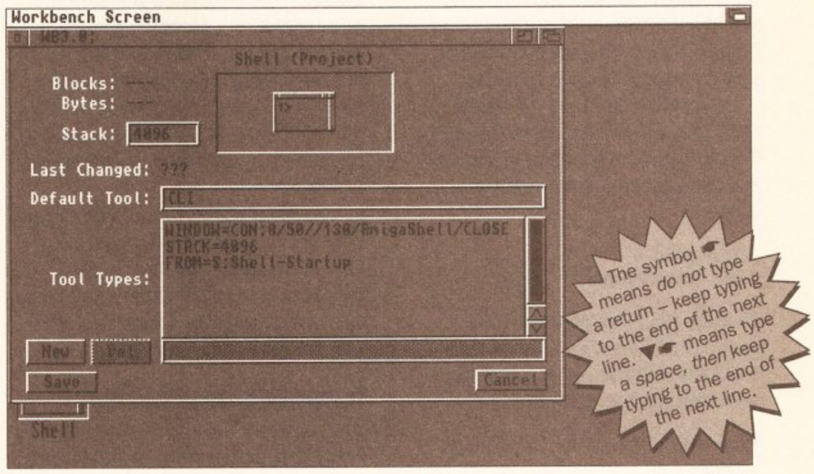
Although Workbench 2 and 3 have improved matters, a great deal of software simply will not run from Workbench and has to be accessed from the native AmigaDOS environment. There are a number of reasons for this, not least that it is easier to develop an application for AmigaDOS only. AmigaDOS has, and always will have, a distinct advantage: you can specify any supported option for any program every time it is "launched".

Do I need to know AmigaDOS?
No one "needs" to know AmigaDOS, but every Amiga user should know that it exists and have a basic understanding of it. The subject is so huge that several voluminous books have been written about it, so by that yardstick, it must be hellishly complex.

AmigaDOS is what you make of it. Although there are well over 100 commands, most users will manage perfectly well with a basic understanding of a core consisting of less than 20. If that sounds a lot, count how many menu options are available from Workbench. Few people have the vocabulary of William Shakespeare, yet most can write a formal letter.

I can't even set my video's timer, what chance do I have with AmigaDOS?
This problem is one of perception. Who said it was easy to set the timer on a video anyway? We naturally assume that because a video is a consumer item it must be easy to use – nothing is further from the truth. When setting a video we have to juggle with many variables such as time, program length and channel – often via a multi-function control pad. When you use AmigaDOS, you communicate with the machine by giving it written instructions. It looks harder than it really is.

Do I need to be a programmer to use AmigaDOS?
AmigaDOS is as alien to programmers as it is to everyday users since it is a "language" in its own right. Many C programmers stumble with AmigaDOS just as AmigaDOS programmers flounder with C. Although programmers will find it easier to pick up, there is nothing stop the average user getting some hands-on experience.



Using the Workbench Information option for a "project" file – note the Default Tool is currently CLI. Any TOOLTYPES should be deleted.

Try loading it now:

```
1>ED S:ED-Startup
```

It looks like gibberish when you see it for the first time. And to make matters worse, this facility is not documented in the official AmigaDOS 2 manual either. A single command, **SI**, does most of the work. It's function is to configure *ED*'s menus using the following syntax:

```
SI <sequence number> <type>
["text"] ["command"]
```

Sequence number – This indicates the position of the text within the menu, where 1 is the first entry (Project) counting down and right to **Commands...Redisplay**, although this last entry does not appear in the default definition.

Type – This numerical argument determines what the text will do where: 0 = last menu item; 1 = menu title; 2 = menu item; 3 = menu sub-item; 4 = horizontal bar. In AmigaDOS 2, option 3 is a delimiter bar and option 4 is not supported. Also, option 3 in AmigaDOS 3 does not seem to work.

Text – Most commands will require some explanatory text. Quotes should surround the text and it must be kept short since the width of the menu is determined by the longest menu item – it is best to determine this from any existing items. The escape command may also be included here to remind you of the keyboard shortcut.

Command – The command itself – contained in quotes. Although there is no limit to their length, **ED** commands tend to be on the short side. When **ED** reads and executes a menu item, the **Escape** key is simulated by the program and is not required as part of the command. Two formats are available for some commands – **execute** and **"query" execute**. The **Save** command shows this clearly:

```
si 3 2 "Save ESCsa" "sa"
```

Here the command **sa** tells **ED** to save the current file immediately, as if you had entered **<ESC>SA**. In the second example below, **ED** can request input, viz:

```
si 4 2 "Save As... ESCsa" "sa ☛
? /Write File As: /"
```

This command is akin to **<ESC>SA/FileName/** but in this case **ED** asks for a filename. This is triggered by the use of the query operator placed after the command. A prompt, which is the text delimted by slashes above, appears at the bottom of the window.

While the **": "** part is not required as part of the prompt, it aids readability. For example, if the colon is left out...

```
si 4 2 "Save As... ESCsa" "sa ☛
? /Write File As/"
```

...the prompt looks like this after the user has entered a file name:

```
Write File AsDF0:S/MyFile
```

A WORKBENCHED EXAMPLE

AmigaDOS is closer to Workbench than you may think. This tutorial is based on the real-life experience of a beginner who had managed to extract a game from a magazine coverdisk but could not get it to appear on the Workbench. The scenario goes something like this:

Our beginner is using Workbench 1.3 on a 512K Amiga A500 with two drives – a typical home system. He has managed to extract the software,

which we'll call **Game**, to the RAM Disk, and has verified its existence by using a file requester from another program. The problem he now faces is how to get **Game** running – first from AmigaDOS and eventually from Workbench. The machine has been booted from a magazine coverdisk and a minimal Shell is available.

The first command he might try is **DIR**. This will list the disk's contents. The software he wants is in the RAM Disk so we could enter a line like this:

```
1>DIR RAM:
Game  Game.ReadMe
```

Okay so far. Now let's see if the application runs. First, we'll make the RAM disk the current directory and then run the software:.

```
1>CD RAM:
1>GAME
Unable to load game: Error code
103
```

A message like this does not look promising. Surely AmigaDOS could be more helpful than that? On most systems, a similar malady would produce a report along these lines:

```
1>GAME
Unable to load game: Insufficient
free store
```

This error, which is a textual explanation of **"Error code 103"** above, simply means there is not enough memory to run the program. This is not altogether surprising since the application is stored in the RAM Disk.

For an explanation, we have to look at the disk that the system was booted from, namely a magazine coverdisk. Such disks are crammed with so much information there is barely enough room for even a small subset of AmigaDOS commands. When AmigaDOS generates an error message, it looks in the current **C:** assignment – the C directory of the boot disk – for a program called **FAULT**. This program translates the error codes into something more intelligible and, if the command is missing, AmigaDOS reports the raw error message. This shouldn't occur on Workbench 2 and 3 machines because the command is internal (in ROM).

An ideal solution would be to re-boot the system with a proper Workbench disk and start again. However, that might cause problems with the de-archiver so we're stuck with things as they are.

INDIRECT AMIGADOS

Until now, we have been entering AmigaDOS commands and assuming they would be available. This last example proves that, sadly, this is not always the case and you might just find yourself faced with such a predicament some day. But there is an answer.

When using AmigaDOS, we often talk of "paths". Paths (the position an object is stored on the disk) can be manually defined, as when you come to save a file from within an application. Paths can also be automatically defined, such as in the case of commands located in the search path. The search path is a list of directories AmigaDOS searches every time you type in a command. Most commands are located in C, which is therefore the first directory in the search path that AmigaDOS looks in for the command in question.

If the command **FAULT** is entered using the current setup, it will return:

```
1>FAULT 103
Unknown command: FAULT
```

However, when we give the name of a command, we can precede its name with a path, and therein lies the solution – this forces AmigaDOS to look for the command along the path we have specified. Now, let's assume we have put a Workbench disk in the external drive, DF1:. We can then help AmigaDOS locate the **FAULT** command like this:

```
1>DF1:C/FAULT 103
Fault 103:Insufficient free store
```

You can try this for yourself using a spare copy of your Workbench disk (if you don't have one, make one now) and popping it into any drive. It doesn't matter if you remove your current boot disk – AmigaDOS will not ask for it back because you have included a search path as part of the command name.

The next stage is to get the game on to a blank disk. We can't do this from Workbench because it does not have an icon and Workbench 1.3 did not have the ability to display icon-less files. With a blank disk in the external drive, the command is quite simply:

```
1>COPY RAM:Game TO DF1:
Unknown command: COPY
```

Oops! If everything went smoothly, I'd be out of a job. This is a deliberate mistake which is quite common with coverdisks and disks sourced from other places. It happens because there is simply not enough room to include all the commands. Even **COPY** sometimes gets the chop.

This problem is fairly easy to solve, though – use the technique outlined above for **FAULT**. We'll put the Workbench disk in the internal drive and the blank in the external drive to give us:

```
1>DF0:C/COPY RAM:Game TO DF1:
```

In order to make things a bit more interesting, just think for a moment: what would happen if the example machine only had a single disk drive? What would happen if we used a command like this?

```
1>DF0:C/COPY RAM:Game TO DF0:
```

Which disk is in drive DF0:? If the Workbench disk is present, the file gets copied to it; if the blank disk is there instead, the command cannot be found. Either way, this is clearly not the solution. Here are two possible alternatives:

The most reliable method is to change the destination disk's name **(DF0:)** with the name of the disk concerned – its volume name. You can get this from the Workbench. If the disk is newly formatted, it will be called **Empty** and we'll assume that this is the case here. The modified command line now looks like this:

```
1>DF0:C/COPY RAM:Game TO Empty:
```

This solution is not perfect, as it assumes you have started with the Workbench disk in DF0:. A better, although more long-winded, method is to use the volume name of the Workbench disk too, viz:

```
1>Workbench1.3:C/COPY ☛▼
RAM:Game TO Empty:
```

USING RESIDENT

The solution outlined above will work in a given situation for any Workbench (even 1.0) but most of you will be using at least Workbench 1.3. If your Workbench is an earlier version, you should try to obtain an updated copy as soon as possible because the whole system is a lot better. One of the new commands introduced in Workbench 1.3 is **RESIDENT**. This makes a single copy of any command in memory available for any number of multi-tasking processes. On a more down-to-earth level, it solves this problem rather nicely:

```
1>DF0:C/RESIDENT DF0:C/COPY
```

Now that **COPY** is resident in RAM, we can use a command knowing that the right disk will be affected. For instance, assuming the destination disk is in the internal drive:

```
1>COPY RAM:Game TO DF0:
```

This may seem a little long-winded, but remember that the **RESIDENT** command is fire-and-forget – **COPY** only needs to be made resident once. This method is, therefore, particularly suitable if you are copying a lot of single files.

ICONIC CREATION

You may recall that the object of this exercise is to copy an arbitrary application to a disk and give it an icon. As the situation stands, your machine could be re-booted with a real Workbench disk and the application started directly from AmigaDOS with a command like this:

```
1>DF0:Game
```

This is a little fussy, so let's give it an icon. Assuming the application can be run directly from the Workbench (not everything can), we need to give it the correct type of icon – a tool. Designing an icon from scratch is quite possible but outside the realms of AmigaDOS at this stage, so we'll take the *Blue Peter* variety. The Workbench disks are full of "tools" and, assuming you've got the Workbench 1.3 disk set, the **MORE** tool is a good place to start. Any "tool" icon can be used; you can verify you've chosen a "tool" (as opposed to a "project") by checking the icon's type from the Workbench's icon **INFORMATION** window.

The obvious solution, once the correct type has been found, would be to simply drag it to the appropriate disk and give it the right name. Unfortunately, this will not work, because when Workbench copies an icon it copies the file (data or application) with it. This is natural enough, but it prevents the obvious method because it is not possible to rename something when an object of the same name exists. We have to copy just the icon file instead (icons are the files ending in **.INFO**). To keep things a little simpler, we'll make **COPY** resident and work from the internal drive:

```
1>RESIDENT C:COPY
```

Now **MORE**'s "icon" – often called a dot-info file – is copied into a temporary buffer area: the RAM disk. (On a dual drive system it could have been copied to the destination directly, by replacing **RAM:** with **DF1:**.)

JARGON BUSTING

Archive – a collection of programs and data all kept together in a handy wrapper called an archive. Most archiving programs also "stuff" or "crunch" the data using one of several data compression methods. The net result is you get a lot more data on a single disk than is possible by normal means. On the downside though, the process of archiving and de-archiving is slow and can be fiddly.

Launch – to start a program from the AmigaDOS Shell by entering its name or double-clicking its icon in the Workbench. Launch is a fancy name for "start".

```
1>COPY SYS:Utilities/☛
MORE.INFO TO RAM:
```

Finally the icon is moved to its permanent resting place on the blank disk. This example uses the volume name of an empty disk as described earlier:

```
1>COPY RAM:MORE.INFO TO Empty:
```

All that remains now is to change the name of the dot-info file to the name of the application concerned. This is achieved using **RENAME** like this:

```
1>RENAME Empty:MORE.INFO AS ☛▼
Empty:Game.INFO
```

At this stage the disk (**Empty**) can be opened on the Workbench and the program launched by double-clicking the icon in the usual manner. If the disk is already open, it will have to be closed and re-opened to see the icon. Also, the physical position of the icon on the disk may be unexpected. Workbench usually modifies the position of icons when they are copied, but AmigaDOS cannot do this (as far as AmigaDOS is concerned an icon is just another file). You can fix this yourself using the Workbench's **Clean Up** and **Snapshot** functions.

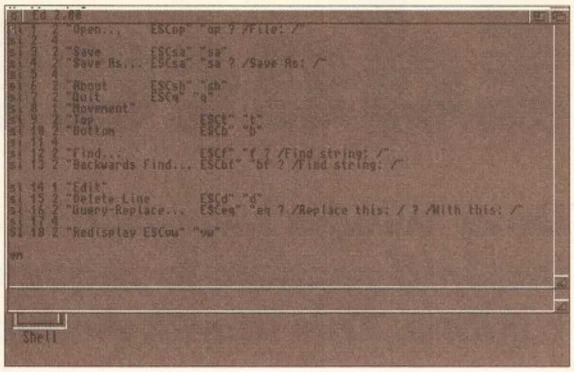
THE ROAD TO HELL

If it were all that easy everyone would do it. Unfortunately, the vast majority of programs that need to be executed from the Shell cannot be launched from Workbench using this method. All that explanation was not without reason, though, because there is a solution, albeit a slightly more complex one.

Workbench applications are specifically written to work from Workbench and AmigaDOS programs are not. Despite the more technical considerations, AmigaDOS programs will assume a virtual terminal is available for their use. Normally this is the Shell (or CLI) window, but Workbench does not open a console window for them. For this reason a special program is supplied with Workbench revisions from 1.3 onwards. **ICONX** is a command which bridges the final gap between a raw AmigaDOS program and the Workbench.

Configuring a program to use **ICONX** is very similar to the method described above, but there are a few more steps involved. The most important difference is that **ICONX** uses Project and not Tool icons. Therefore, rather than looking for a tool, you have to locate a project instead.

The most accessible one of these is the Shell icon, which is unusual in itself because no real project file is attached to it. You can copy the Shell icon on to the destination disk by dragging it with Workbench and using AmigaDOS at the renaming stage. If you have tried the other method first though, be careful not to delete the "tool" icon from Workbench or the application will go with it. Use AmigaDOS instead. For instance:



Working with ED's 2.0's menu definition file.

```
1>DELETE Empty:Game.INFO
1>RENAME Empty:Shell.INFO AS ☛▼
Empty:RunGame.INFO
```

That bit is painless enough, but now you have to create a simple script file to "run" the application using **ED**. A script is merely a sequence of commands that mimics what you would type from the Shell – and for a simple application such as this one it would contain the single line:

```
GAME
```

We can create the file using **ED** as follows (note it *must* have the same name as the icon you have created, but without the dot-info):

```
1>ED Empty:RunGame
```

Finally, we have to change the default tool in the Project's icon to **ICONX**. This is done from the **Info** screen on Workbench. Select the text gadget which contains **SYS:System/CLI**, replace it with **C:ICONX** and click **SAVE**.

ICONX will open a default console window for the program when it is started and close it when it exits, without you having to lift a finger. Simple it isn't, but very rewarding when you see the results for the first time. **AS**

ED COMMANDS (ALL VERSIONS)

Movement Functions

<Ctrl>-D:	Move up one page.
<Ctrl>-E:	Go to top or bottom of page.
<Ctrl>-I:	Cursor to next tab stop.
<Ctrl>-R:	Cursor back one word.
<Ctrl>-T:	Cursor forward one word.
<Ctrl>-U:	Move down one page.
<Esc>-B:	Bottom. Move directly to the end of the file.
<Esc>-J:	Join. Merge the current line with the line below it.
<Esc>-S*:	Split. Break the current line at the cursor.
<Esc>-T:	Top. Go to the top of the file.
<Esc>-CE*:	Cursor to End. Move the cursor to end of line.
<Esc>-CL*:	Cursor Left. Move the cursor left one character.
<Esc>-CR*:	Cursor Right. Move cursor right one character.
<Esc>-CS*:	Cursor to Start. Move cursor to start of line.
<Esc>-M[n]:	Move. Go to line **[n]**.
<Esc>-N*:	Next. Go to start of next line.
<Esc>-P*:	Previous. Go to the start of the preceding line.

Layout

<Esc>-EX:	Extend. Remove the limit on the right margin.
<Esc>-SR[n]:	Set Right. Set right margin (word wrap) at **[n]** characters.
<Esc>-SL[n]:	Set Left. Set the left margin at **[n]** characters.
<Esc>-ST[n]:	Set Tabs. Position phoney tab stops at **[n]** characters apart.

Editing Functions

Backspace:	Delete the character immediately behind the cursor.
DEL:	Delete character under cursor.
<Ctrl>-A:	Insert a new line.
<Ctrl>-B:	Delete a single line at cursor.
<Ctrl>-G:	Repeat last escape command.
<Ctrl>-O:	Delete the word to the right of the cursor.
<Ctrl>-Y:	Delete from cursor to end of current line.
<Esc>-A/text*:	After. Insert "**text**" after the cursor position.
<Esc>-D*:	Delete. Remove the current line
<Esc>-DC*:	Delete at Cursor. (As **DEL**.)
<Esc>-I/text*:	Insert "**text**" at the cursor.

Block Commands

<Esc>-BE:	Block End. Mark the end of a text block.
<Esc>-BS:	Block Start. Mark the first line in a block.
<Esc>-DB:	Delete Block. Delete the currently marked block.
<Esc>-IB:	Insert Block. Copy the currently marked block to the current cursor position.
<Esc>-SB:	Show Block. Position the current block at the start of the window.
<Esc>-WB/file:	Write Block. Save the current block to file.

Search and Replace

<Esc>-BF/text:	Backwards find. Search for text backwards in file.
<Esc>-E:/ab/cd:	Replace one instance of "**ab**" with "**cd**".
<Esc>-EQ:/a/b:	As **<Esc>-E** with confirmation.
<Esc>-F/text:	Find. Locate the next instance of "**text**".
<Esc>-LC:	Letter Case. Make searches sensitive to case. In other words, "**ABC**" <> "**abc**".
<Esc>-UC:	Ignore Case. Make searches case independent. So now, "**ABC**" = "**abc**".

File Commands

<Esc>-IF/name:	Insert File. Insert text from the file "**name**". Full path may also be included.
<Esc>-Q:	Quit. Leave *ED* and return to caller without saving.
<Esc>-S:	Save. Save all current file and continue editing.
<Esc>-SA/name:	Save As. Save current file on disc as "**name**".
<Esc>-U:	Undo. Revert back to the last version of the line after editing. Note that this does not undo deleted lines or blocks!
<Esc>-X:	Exit. Save current file, quit *ED* and return to caller.

* These commands are intended for *ED's* macro language although they can be executed directly.

Educating Archie

Dave Winder's voyage of discovery through the Internet last year inspired readers to request a more detailed probe into its innermost regions. This month Archie comes under his scrutiny.

The name *Archie* is a cunningly clever derivation of the word 'archive' and entirely apt, because searching through archives is what *Archie* has been designed to do.

Developed at the McGill University School of Computer Science in Montreal, Canada, *Archie* enables users to find any file stored in any public archive site on the Internet.

Think about the number of files that are stored on your hard disk, then consider the number of files that may be stored on an Internet site's computers. Now multiply that already large figure by the number of public access Internet archive sites, and then you'll begin to get an idea of just how difficult it can be to find the file you you want. *Archie's* database contains information on around 1,000 public access sites — that's 1.5 Million files or over 100 Gigabytes of information!

You can log into *Archie* in three different ways. The easiest method is to access a service that offers a client program. Most of the services which offer Internet access should be able to help you here (I use the CIX Internet Gateway).

Secondly, you can telnet to an *Archie* site such as **archie.mcgill.ca** which will connect you directly to the system. If asked for a login name, just type **archie**.

Finally, you can send a request for information by EMail to **archie@quiche.cs.mcgill.ca**. Leave the subject line blank. In the message just type: **prog <filename>**. If you want to locate several files, put them all on the same line in the format: **prog <filename 1> <filename 2>**. Within a few hours you should receive a reply in the form of a list of sites holding your chosen file.

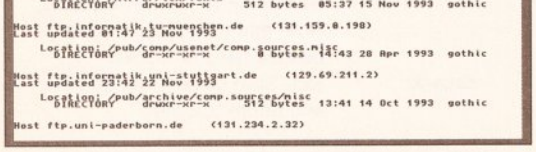
Whichever method you use to connect to *Archie*, you will get a list of all the public access Internet sites which hold the file you entered. You can get hold of them by using the File Transfer Protocol (see Jargon Busting). There are public access *Archie* sites all over the world. In the UK you you might like to try **archie.doc.ic.ac.uk**.

ARCHIE TUTORIAL

Once connected to ARCHIE, you have a number of command options, the most common and useful of which are described here:

Help – the help command is probably the most useful as it lists all valid commands.
List – the list command shows all the current Internet sites stored in the *Archie* database and includes reports on when the information on those sites was last updated. You can limit the information to a few specific sites.
Mail – this is used to send the output of the last command issued to a specified address.
Prog – this searches the *Archie* database for files matching the given pattern as specified in the command argument. The resulting list supplies information such as the names of sites holding the file, the size of matching files and when they were last updated.

NB. *Archie* does not accept DOS or UNIX wildcards
Whatis – this searches a software description database containing the names and short descriptions of software packages and documents stored on the Internet. It will search for the substring given in the argument (ignoring case) and return a list of all files which contain that substring in the description held.



Archie is extremely useful for searching through the huge number of files stored on the Internet.

You can customise the way *Archie* looks for files and reports the results to suit your needs. This is accomplished by the use of variables. The variables listed below can be put into action by using the **set** command, and their values undone by using the **unset** command. Variables come in three different flavours, and include:

Boolean – these variables can be simply set or unset as desired.
Pager – this filters all result output through the pager, so you don't get text spilling onto more than one screen at a time.
status – this variable displays a status line during a database search which gives details of the number of matches made and a percentage progress report on the amount of the database searched so far.
Numeric – these variables are an integer within a defined range.
autologout – this sets the number of minutes of inactivity you are allowed before you are automatically logged out. The range is between one and 300 with the default setting being 15 minutes.
maxhits – this variable restricts the amount of matches in the database search to a specified number. *Archie* defaults to a maxhits value of 1000 which means it will attempt to find up to 1000 matches to your request. This can mean it takes a long time to perform a complete search. Reset the maxhits variable to a smaller figure if you want faster searches.
String – these variables consist of a string of characters.
mailto – this lets you use the mail command without arguments and ensures that all output is sent to the address specified in the string variable. Multiple addresses can be specified by using a comma separated string with no spaces.
search – the search variable defines what type of search is executed when using the prog command. There are a number of values which can be used and they are listed below:
exact – this is the fastest search method. It looks for an exact and case specific match.
regex – this is a default search method which allows the use of regular expressions. These provide sophisticated pattern matching when searching a database but can be complicated to understand. I suggest that you don't use it unless you are familiar with the way regular expressions work.
sub – this allows a search for a match on a substring without allowing for case. For example, if I specified a search pattern of war, it would match with war, dwarf, Swarfega and Warrington.
subcase – this has the same effect as the sub value, but is case specific.
sortby – this variable defines the order in which the output of a search is listed. There are five different sorting options:
none – not sorted at all. This is the default.
filename – sort by filename.
hostname – sort by name of host site.
size – sort by file size (largest first)
time – sort by update time (most recent first).

All the above options, apart from the first, may have the order reversed by using the letter **r** as a prefix. So, to have all files sorted by size with smallest files first, you would use **rsize** instead of **size**.
term – this variable sets the type of terminal in use. The information is used by the pager (this is vital to the way in which text is displayed on your screen). The number of rows and columns can be set as can the terminal type. AS

JARGON BUSTING

Internet – a gigantic network of computers which are connected around the world.

Client – this is a relatively simple program that enables you to use a more complicated server program without having to worry about many of the network details and commands.

FTP – the File Transfer Protocol allows files to be downloaded from an Internet site to your computer.

String – a list of characters.

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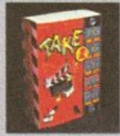
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Noddy's excellent adventure

Wilf Rees reluctantly joins Noddy on a Big Adventure and loves every minute of it.

Noddy and his odd mate, Big Ears, have held little interest for me since I made the move into long trousers, so I have to admit that I was not looking forward to spending an hour or so familiarising myself with *Noddy's Big Adventure*, the latest offering from the Jumping Bean Company.

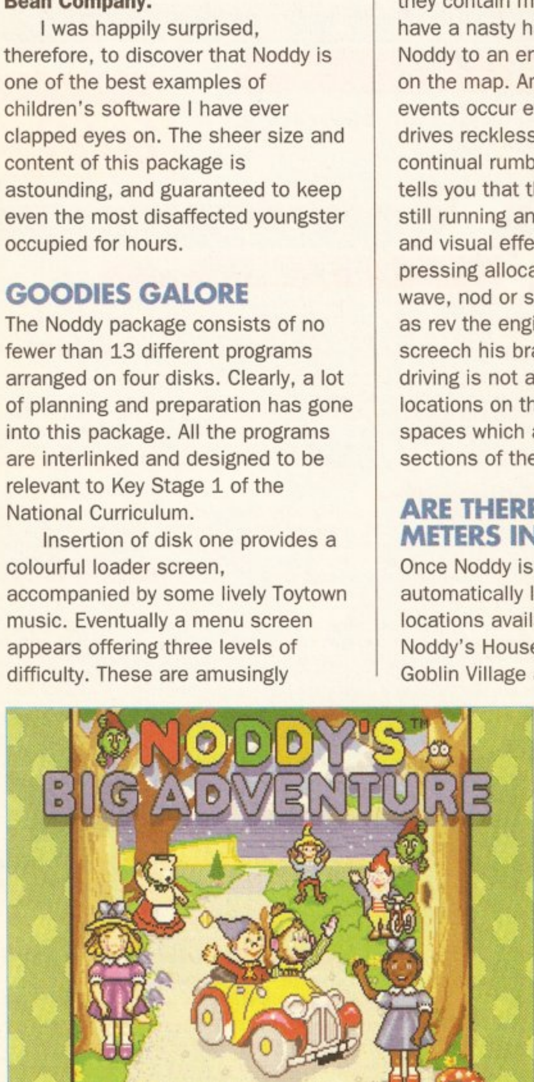
I was happily surprised, therefore, to discover that Noddy is one of the best examples of children's software I have ever clapped eyes on. The sheer size and content of this package is astounding, and guaranteed to keep even the most disaffected youngster occupied for hours.

GOODIES GALORE

The Noddy package consists of no fewer than 13 different programs arranged on four disks. Clearly, a lot of planning and preparation has gone into this package. All the programs are interlinked and designed to be relevant to Key Stage 1 of the National Curriculum.

Insertion of disk one provides a colourful loader screen, accompanied by some lively Toytown music. Eventually a menu screen appears offering three levels of difficulty. These are amusingly presented as divers on diving boards at three different heights. Once a level has been chosen, the corresponding diver plunges into the water. Next, you are presented with five icons. The first is a picture of Noddy sitting in his car. This icon loads The Driving Game which is central to the whole suite. It allows you to steer Noddy around a complex map of North East Toytown. Control is easy, using the cursor keys or a joystick, and dotted all over the map are all manner of features. Many of Noddy's friends appear at the roadside, waving.

Some are just being friendly but others want a lift and Noddy is obliged to stop and pick them up – he earns sixpence with every lift. There are country roads, which you can take as short-cuts. But beware, they contain magic tunnels which have a nasty habit of propelling Noddy to an entirely different location on the map. Amusing little animated events occur everywhere as Noddy drives recklessly around the town. A continual rumble from the speakers tells you that the little yellow taxi is still running and additional sound and visual effects can be called by pressing allocated keys. Noddy can wave, nod or sound his horn, as well as rev the engine mercilessly and screech his brakes. But all this driving is not aimless. At four locations on the map are taxi parking spaces which allow entry to the other sections of the software.



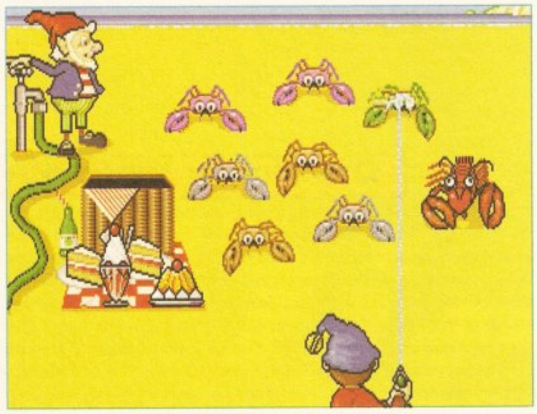
The main loader screen showing all Noddy's friends.

ARE THERE PARKING METERS IN TOYTOWN?

Once Noddy is parked, the software automatically loads one of the four locations available. These are: Noddy's House, Monkey Town, The Goblin Village and The Beach.

Once the software has loaded, a main screen appears. In each case, the screen is approximately twice the width of the viewing screen so you can scroll sideways to view more. Each of the main screens is littered with point-and-click events. I confess to laughing out aloud at some of the very amusing animations available.

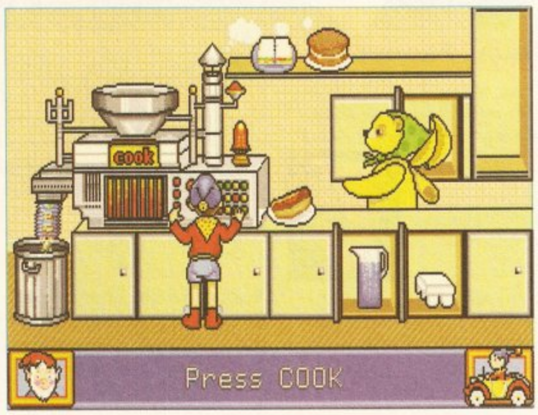
Among the various animations, are hidden the load options for further games so you have to find them by trial and error.



It's Space Invaders *Jim*, but not as we know it! Crabs attack the peaceful picnic and attempt to steal the food. Only Noddy, armed with a hosepipe, can drive them away. Look out for the black crabs which drag Noddy away and allow the others in.

The first of the locations is Noddy's House. The main screen shows a view of Noddy's house including the garage, right through to the kitchen. Pointing and clicking will cause the car to start up, the headlamps to work, a candle to light, the main light to go on, the TV to switch on and more besides. As we scroll into the rest of the house, the telephone will ring, the taps will turn on and the oven door will open. The list goes on, but I particularly liked the picture on the wall which changes from being a winter scene to a spring scene, a summer scene and so on through the four seasons. This has a simultaneous affect on the view out of Noddy's window, which reflects the season shown on the picture.

My favourite feature is the door. Clicking on this causes a letter to come through the letter-box. Click again and another letter arrives. The more you click, the more they come until they are spreading in a pile across the floor. I was curious to see how many the program would allow but I gave up at about 50!



Cooking can be fun or a recipe for disaster. Noddy places the ingredients from the cupboards into the oven and out come assorted meals which meet with either approval or contempt from Mrs Tubby Bear. At its most difficult level, this is a challenging task and educational experience for any child.

WEIGHING AND COOKING

There are two games to be played in Noddy's house. The first is located in the garage and centred on a set of scales on a shelf. An animated requester of two versions of Noddy, (one shaking his head, the other nodding) asks if you wish to go into the game or continue playing in Noddy's house. Choosing the affirmative loads the game which offers three difficulty levels. In the hardest level, a set of scales appears (kindly constructed by Mr Wobbly Man who just happened in for a chat) and a task begins which involves placing labelled weights on one side of the scale to counterbalance the object on the other side. Multiple permutations are available and objects can be both added and removed. Once the task is completed, a click on Mr. Wobbly Man affirms this and success or failure is shown by a tick or otherwise. Throughout this game and all the others, that strange gnome, Big Ears, is available in the bottom right hand corner of the screen. Like

all friendly gnomes, he provides on-line help to correct or advise on any inaccuracies or confusion.

Further along the original main screen of Noddy's house is an oven. Clicking on this presents a load option for the cooking game. This really is a very imaginative game which requires considerable deductive skills. Again, there are three levels of difficulty. In the most difficult a row of cupboard doors can be opened to reveal a collection of vegetables, fruits, cake mixes or meats. Putting together appropriate ingredients and placing them in the funnel of the cooking machine causes lights to flash and sounds to whirr until, finally, a cooked meal on a plate emerges from the conveyor belt. Then along comes Mrs Tubby Bear who smells the completed offering and either approves the dish, by placing it on the shelf or rejects it by taking it away. The onus is on the user to mix together ingredients which are complementary. Ham, carrots and potatoes will produce an acceptable lunch but try mixing cherries, cake mix and lettuce and the outcome is hilarious. Once the required number of dishes have been cooked, you move to an animated dinner party, and on comes Noddy with the strange concoction of unrelated ingredients, much to the amusement of the other diners (who presumably have no intention of eating them).

This section of the package is really delightful. It contains all of the ingredients (ahem) for an entertaining as well as educational package and combines them in a way that is both visually stimulating, and mentally taxing.



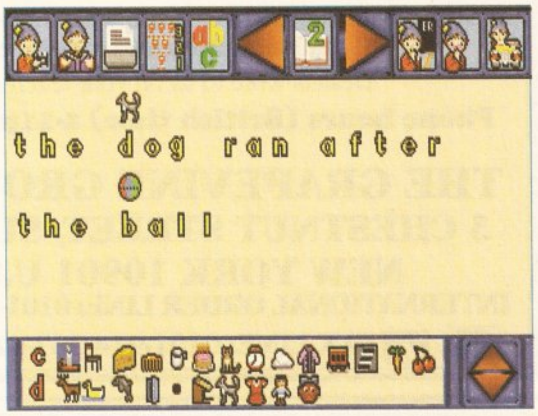
Goblin Village, one of the main screens, contains a host of animations and sounds which are activated by pointing and clicking. Two games can be found in this location, namely Tricky Trees and Can you find Me?

DRIVE ON NODDY!

Further around the driving course is Monkey Town. We are shown the high street where seemingly countless 'point and click' events instigate animations and sounds. The bell on the church rings, the traffic lights can be changed, two monkeys chatter endlessly, a shopkeeper comes out of his shop and slips on a banana skin... all of life is here.

CUT AND PASTE

The single option in Monkey Town is Bert's Scrapbook. It is activitated by a bystander reading a newspaper. It seems that poor old Bert has got himself into a real mess. All the pictures and captions in his scrapbook have fallen out. You have to put them back in the right order.



The bonus disk is a very well written introduction to word-processing and is worth the cost of the entire package by itself. It contains several of the features of full-scale commercial word processors.

On the easy level there are only six pictures to sort out but the hardest level has two whole pages of pictures and captions to be assembled. Point-and-click cursors demonstrate how to turn pages and select captions; images are moved with the mouse. Of all the games in this package, I found this one the most confusing, even with Big Ears on-hand to offer on-line help . It's a good idea but I think it demands rather a lot from small children.

GOBLIN VILLAGE

The third place on Noddy's tour of Toytown is Goblin Village. It's surrounded by a creepy forest with trees that laugh at you and stick their tongues out *(tongues? – Ed)*. Leaves fall from trees and owls hoot derisively. Moving along the screen, we come to the edge of the village. Again, there is an assortment of animations and sounds. Doors slam and birds sing while goblins crop up all over the place. Two games are accessed from the loader screen. Of these, Tricky Trees is a memory game which introduces the names of different colours and shapes. The trees have different coloured noses *(noses? – Ed)*, which illuminate, animate and sound a note. You are required to repeat the sequence of sounds as they grow in number.



The Driving Game with waving friends, country roads and taxi parking locations which take the user into the four main areas of the suite.

The second game is Can You Find Me. This is set in a cinema where an audience of rowdy goblins continually throw popcorn at the screen while you endeavour to match shapes and colours. At the hardest level, written instructions are given to identify shapes and colours and these must be found on the cinema screen. Once the game is completed, the film starts and something resembling *Keystone Cops* ensues with goblins being chased around by a policeman. This is fairly typical of educational software and offers a valuable learning experience to the young child.

SEASIDE SPECIAL

Noddy's tour of Toyland ends at the seaside. Again, there is a main double screen with umpteen animations and sounds. These include speed boats tearing across the screen, crabs making nuisances of themselves and Noddy's deck-chair collapsing.

There are two games here. Level one of Beach Sorter requires a pile of pebbles to be colour and shape coded then put into different buckets. The highest level requires a variety of charming seaside creatures to be classified as mammals, fish and reptiles.

Picnic Attack is a crab version of space invaders in which crafty crustaceans attack your picnic. Noddy fights them off with a hosepipe. Watch out for the black crabs which drag Noddy away, and the exploding lobster which breaks up into eight tiny terrors – huge fun!

BONUS! BONUS! BONUS!

Just when you think it'safe to go back into the water, you realise there is still one disk left! This alone is worth the price of the complete collection. It comprises a three level word processor. Each level offers games aimed at increasing children's vocabularies and developing their spelling skills. The most difficult level offers an excellent introduction to basic word-processing and contains several features found in full-blown word-processing packages. These include backspace, delete and wordwrap.

The games at each level offer progressive vocabulary and spelling tests starting with an initial letter and ending with a crossword.

I could have devoted these two pages to describing the merits of the word processor alone. Suffice to say that, as part of this comprehensive package, it represents astounding value. *Noddy's Big Adventure* is easily one of the finest pieces of educational software I have seen.

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The Picasso II RTG emulator has been designed so that it uses no Chip RAM. All available screen modes on the Picasso II use only Fast RAM. This sophisticated design means that even a 1Mb Picasso II board can support as many high resolution 256 colour screens as will fit in the Fast RAM of your system.

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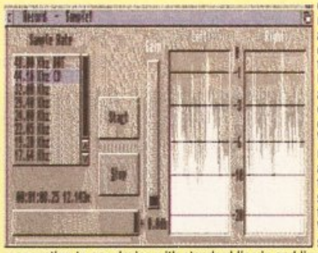
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Nothing But AMOS Monthly disk magazine – £2.50 – news, reviews, previews, tips & cheats. Contact Neil Wright 39, Riding Dene, Mickley, Northumberland, NEA3 7DL ☎ 0661 842292. (AS35)

Pennine Amiga Club Free membership, free advice and a newsletter. Contact Neville Armstrong, 26 Spencer Street, Keighley, West Yorkshire BD21 2BU ☎ 0535 609263. (AS33)

Software City Swapping, competitions, club magazine. Membership £8. Contact N Richards, 9 Hollis Close, Manor Estate Farm, Rawmarsh, Rotherham, South Yorkshire S62 7LX ☎ 0709 526092. (AS33)

Steel PD, cheats, ideas, music, art, programming, hardware mods. Free membership (postal only). Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB. (AS33)

The Amiga Club Monthly newsletter, competitions, software exchange, huge PD library, cheats, tips, reviews. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR. Membership £10 life plus two free games and DCopy. (AS33)

The Amiga Studio Friendly, helpful advice for serious Amiga users. Monthly newsletter, PD library, free loan of equipment to members, bar. Meets 7pm Tuesdays, Mitchells Club, Scotia Road, Tunstall. Contact Dave Rose ☎ 0782 815589. (AS33)

TDM Disk mag, all PD, general interst, game software, hardware. Free Membership. Michael Griggs, Palette, Black Barn, Gedney Marsh, Spalding, Lincs. (AS40)

Warpdrive Help-line, PD library, bi-monthly disk mag, free drinks, competitions and infosheet. £15 per year. Contact B Scales, 110 Burton Ave, Balby, Doncaster DN4 8BB ☎ 0302 859715. (AS33)

NORTHWEST

Amiga Paradise Non-profit making club with competitions, swaps, contacts, free bi-monthly disk mag. Send sae and disk to Daz, 283 Tyldesly Road, Atherton, Manchester M46 9AL. £10 per year (AS40)

Amiga Users Group Part 2 Advice, technical support, BBS, PD library, tuition, etc. Contact Andy Wilkinson, 25 Glen Eldon Road, Lytham St Annes, Lancashire FY8 2AX ☎ 0253 724607. Free membership. (AS33)

Blackburn Amiga Users Group Software/hardware help, public domain, exchange of information. Meets 7.15pm every Thursday, Room 3, Audley Sports Centre. Contact Eric Hayes, 9 Observatory Road, Blackburn, Lancashire BB2 3HE ☎ 0254 675625. (AS38)

Computeque From beginner to advanced user. Meets 7.45pm–10.30 pm every Tuesday at Inskip Meeting Hall, Ashurst, Skelmersdale, Lancs. Contact Steve Lalley ☎ 0695 31378. Half year membership £2.50 children, £3 adults (AS33)

Fylde Computer Club All aspects of computing. Meets 7pm, Lostock Gardens Community Centre, 2nd an d 4th Wednesday of month. £15 per year, 50p on door. Contact Colin Biss, 90 The Esplanade, Fleetwood, Lancs FY7 7BQ ☎ 0253 772502. (AS33)

Hyndburn Amiga Users Club Tuition, advice, PD, and more. Meets Mondays 7pm, at the Canine Club, Accrington (£1 on the door). Contact Nigel Rigby, 7 Brecon Avenue, Oswaldtwistle, Lancashire BB5 4QS ☎ 0254 395289. (AS33)

New Hall Amiga Users Club Games, graphics, music, Workbench programming. Meets 7pm every Tuesday, New Hall Social Club, 104 Bury Rd, Dawtenstall. Membership £5 per year, under 16s not allowed. Contact Bill Grundy, 115 Stanley St, Accrington, Lancs. ☎ 0254 385365. (AS33)

OVERSEAS

16-32 Micro Programming AMOS, bimonthly fanzine, PD (Fish → 590). Membership 100FF or £10. Contact F Moreau, 132 rue Jean Follain, 50000 Saint-Lo, France ☎ 315220 02. (AS33)

32-bit ware Devoted to A1200 and A4000 – PD, coverage of new software for these machines, games help. Meet on Hurricane BBS, mostly Saturday nights. Contact 32-bit ware, Ekorrstigen 10, 147 63 Tumba, Sweden. (AS33)

Amiga Addicts Newsletter and open nights. For info SAE to A Minnock, Clonkelly, Binn, Co Offaly, Ireland. (AS33)

Amiga Athens club PD swaps, tips, cheats etc. Free membership, just new PD or tips in exchange for services. Contact Stefanos Papamichael, 9 Derfeld Rd, Patisia, 11144 Athens, Greece ☎ 01/2027973. (AS33)

Amiga Pros User Group, Greece Concentrates on promotion of the Amiga in Greece, plus DTP, AMOS and graphics. Contact Stefanos Siopoulos, 52 Silivrias Str., N. Smyrni 17123, Athens, Greece, ☎ 01/9349963. Membership free. (AS33)

AMOS Users join The MR AMOS Club, winnersof Europress Software's AMOS programming comp. Send £2.50 for issue one of disk mag. Contact Brian Bell, 8 Magnolia Park, Dunmurry, Belfast BT17 0DS. (AS35)

Amiga Users Group of Western Australia Monthly general meeting with demo, tutorials every Friday evening, Special Interest Group meetings. Membership fee AU$35 to Bill Sharpe-Smith PO Box 595, Cloverdale WA 6105 Australia. (AS40)

AUGFL vzw Bi-monthly newsletter, PD, distribution & support of Belgian programs, registration-site, tips. 750 Bfr/year membership. Contact Lieven Lema, Meesberg 13, 3220 Holsbeek, Belgium. (AS33)

City Centre Amiga Group All-round user group, esp. PD, DTP, help for new users. Meet Ormond Hotel, 2–6pm. Contact Patrick Chapman, 70 Ballygall Crescent, Finglas East, Dublin II, Ireland, ☎ 345035. Membership £3 per week. (AS33)

Comp-U-Pal Australian group for users in the outback. Newsletter, helpline, PD library. Membership A$24. Comp-U-Pal, 116 Macarthur Street, Sale, Victoria 3850, Australia. (AS33)

CUGI Commodore Users Group of Ireland Quarterly newsletter, demos, PD, BBS, discounts. Meet 8pm Friday fortnightly, St Andrew's College. Contact Geoffrey Reeves, c/o St Andrew's College, Booterstown Avenue, Blackrock, Co Dublin. ☎ +353 1 288 3863. Membership £15. Assoc., family & BBS membership also. (AS38)

Danish AMOS user group Trimonthly disk mag, £3 each, PD library SAE for info. Contact Tom Poulsen, DABG, postbox 127, 2640 Hedehusene, DK Denmark (AS40)

Gibraltar Amiga Users Club PD library, monthly newsletter, disk magazine, competitions, regular meetings (in the John Macintosh Hall). Membership from £6 per year. Contact David Winder, 7 Lime Tree Lodge, Montagu Gardens, Gibraltar ☎ 010 350 79918. (AS33)

HTS (Malta) Free membership. Contact K Cassar, Block 1 Flat, 6 H E Hal-Tmiem, Zejtun ZTN07 Malta ☎ 674023. (AS33)

Japan Amiga Group Share disks and make Japanese contacts. Contact: Rick Gardaya, PSC 78 Box 3876, APO AP 96326 USA. (AS35)

Malta Amiga Club Contact Zappor, PO Box 39, St Julians, Malta, ☎ 440453 (AS33)

Maritime Amiga Club Maritime computing, interact with seafarers ashore on Amigas. Contact CDR K Osei, GN Ships Refit Office, 51 Rue de la Bretonniere, 50105 Cherbourg, France. ☎ 33 33225447. (AS33)

Navan Computer Club Software reviewing, graphics, business, news and chat. Meet various hotels in Navan, 7.30–9pm. Contact Mark Arnold, Cannistown, Navan, Co Meath, Eire ☎ 046 21078. Membership £6 per year. (AS33)

N Ireland Amiga User Free PD, disk-based mag £2.50 per issue. SAE to Stephen Hamer, 98 Crebilly Rd, Ballymena, Co Antrim BT42 4DS. (AS33)

Northside Amiga Group Lectures by professionals on different Amigas and hardware. Demonstrations on serious software and games. Meets 8pm alternate Mondays, Donamede House, Dublin 13. Contact William Kelling, 10/A Rainsford Avenue, Dublin 8, Ireland ☎ 01 532 807. (AS33)

Royal Air Force Amiga Club Loads of new PD. Meets 1900-2000 hours, Thursdays, Blk 35, Room 40. Send 10 of your PD disks plus 2 x 24p stamps to Stan Young, HMF RAF Laarbruch, BFPO 43 ☎ 445. (AS33)

Singapore Sling Promotes Amiga in Singapore. Meet Eugenia Court, every Sunday 1pm. Contact Eric Chai ML, Block 4 #14-413, Pandan Valley, Singapore 2159, ☎ 65 4680630. Membership free. (AS33)

Software Exchange Club Free help and advice. Contact Michael Lacey, Fern's Post Office, Enniscorthy, Co. Wexford, Republic of Ireland. (AS38)

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Next month in AS33: Scotland, Wales, special interests, BBSs

Note: this list is provided as a free service for amateur, non-profit-making user groups. *Amiga Shopper* does not endorse or recommend any particular group and cannot be held responsible for any losses or problems you might suffer.

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Your user group will be listed here free of charge for six months, then deleted to prevent defunct groups being listed indefinitely. The number at the end of each entry is the last issue in which that entry will be included. If you want your group's entry left in, just send in this coupon again a couple of issues in advance. PD libraries are now listed at the end of the PD section – this issue, page 98.

If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS35

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Fast talking E

Jason Hulance discovers why E, a Public Domain Amiga programming language, is racing up the popularity charts.

Okay, the first question has to be, "Who needs a new language?". Most people agree that C is the language for serious programmers – some will accept no substitutes. But they are the people who will miss out on the E experience.

Speed is the primary reason that you'd want to test drive E. Its author, Wouter van Oortmerssen (known affectionately as "$#%!"), claims that an ordinary A500 (without Fast RAM) achieves compilation speeds of between 10,000 to 35,000 lines per minute. An A1200 (without Fast RAM) can reportedly achieve 25,000 to 85,000 lines per minute. My experience bears these figures out. In practice you're extremely unlikely to be left waiting for your program to finish compiling.

Not only is E fast at compiling, it also produces small and fast executables. You'd be forgiven for thinking that there's a trade off between compilation speed, executable size and speed of execution, but with E this just isn't the case. After using E for some months, I'm beginning to think that all the other language designers and compiler writers must be doing something badly wrong. Even on a single floppy based system, E is a joy to use. All you need is the compiler (which parses, compiles and links all in one and is currently about 40Kb in size) and the modules (E versions of the Amiga Operating System 2.04 and other useful include files) to be able to write that requester utility!

WHAT'S E LIKE?

Technically speaking, E is a high-level, procedural programming language. It has a lot of built-in functions to simplify some of the more common system calls (such as **WriteF()**, **OpenW()** and **Gadget()**). The system calls of **Exec**, **Intuition**, **Dos** and **Graphics** are integrated into the compiler so there's no need to open these libraries from within your own programs.

Syntactically, E bears a comforting similarity to Modula-2, though its main influence is quite obviously C. This means that you can quite painlessly translate your favourite programs to E. However, the real benefits are reaped when you code directly in E, because you can then take advantage of features such as immediate lists, true inline assembly, exception handling and quoted expressions, as described below.

A BIG LIST OF FEATURES

When you program in C you have the tedious task of filling in structures and (in OS 2.0 and above) constructing tag lists. You can still do this in E, but you would be better off using E's immediate (typed) lists. For instance, a call to **CreateGadgetA** (from the Amiga's **gadtools** library) might be written in E as:

```
IF
(g:=CreateGadgetA(SCROLLER_KIND,
g, newgad,
[GTSC_TOP,2,
GTSC_VISIBLE, 3,

GTSC_TOTAL, 10,
GTSC_ARROWS, 22,
PGA_FREEDOM,   LORIENT_HORIZ,
GA_RELVERIFY, TRUE,
GA_IMMEDIATE, TRUE,
NIL])) = NIL THEN
Raise(ERR_GADGET)
```

This call would attempt to create a scroller gadget (like those found on Workbench drawer windows). The various configurable features of the gadget (like its size and position) are described by the tag list (the bit between the square brackets). To do the same in C, you would need to declare a variable to hold the list and initialise it appropriately. – the list therefore gets separated from the function call where it is used, which makes the program somewhat less readable.

Rather handily, lists can be used in a number of places. In fact, you could replace **newgad** with an immediate list representing a **newgadget** structure. However, it's not a good idea to take this too far since having too many lists could give you a real headache if you need to debug your code!

Advanced users will love the true inline assembly that E offers. You can easily optimise various parts of your code since all the mnemonics are part of the E language. You can easily reference E variables from assembly, too. For example, the following code fragment declares two variables, alters them with some inline assembly and then prints the results:

```
DEF a,b
b:=2
MOVEQ #1, D0 /* These three lines
*/
MOVE.L D0, a /* show off the true
*/
ADD.L b, a /* inline assembly. */
 WriteF('Result: a=\d, b=\d\n',
a, b)
```

An assembly programmer will recognise the third line of the code as standard assembly. The fourth and fifth lines are less standard as they mix E variables and expressions with assembler mnemonics and this shows the real integration of E and assembly.

You could, in fact, write your whole program in assembly and compile it with the E compiler (it's faster than most assemblers). You wouldn't have all the features of a macro assembler but, as Wouter points out in his documentation, you have the whole of the E language to make up for that.

E'S EXCEPTIONAL

Another feature which may at first appear to be only for the advanced user is exception handling (an idea borrowed from languages like Ada). Each procedure can have its own exception handling part. This nicely factors out error handling from the more general parts of your code. When you come across an error, all you need to do is **Raise()** it. Control then passes to the procedure's exception handler where the error can be analysed and acted on appropriately. You can even **Raise()** an error within the handler to recursively call the exception handler of the procedure which called your procedure!

In the accompanying documentation, Wouter gives a nice example of a storage management routine which uses exception handlers. It recursively allocates memory and, if an error occurs, the exception causes the memory to be freed properly. Automatic exceptions can be raised for built-in and library functions. This means you can just call the function, safe in the knowledge that an exception will raised if an error occurs. Good candidates for this are the **OpenLibrary** and **AllocMem** calls:

```
RAISE ERR_NOLIB IF
OpenLibrary()=NIL
RAISE ERR_NOMEM IF AllocMem()=NIL
```

These declarations mean that calls to these functions in your code do not need to be wrapped with error checking as this is done automatically. This should mean that your resulting code is more compact and easier to read.

THPEAKING THENTHIBLY IN LITHP

The last influence on E is Lisp, from which the idea of quoted expressions is borrowed. Quoting an expression gives the address of the piece of (machine) code corresponding to the expression, rather than the value of the expression. This address can be stored in a variable and used like any other address. Passing the address to **Eval()** gives the result of evaluating the expression. This may seem like a lot of effort just to get the value of an expression but it does allow the expression code to be re-used and even passed to procedures.

The documentation gives a good example of how this feature might be used. Suppose you wanted to time various function calls or expressions. In C this would be a real nightmare – you'd have to write lots of little, parameterless functions each of which contained an appropriate expression and probably cast the results to **void**. In E you'd write a timing procedure:

```
PROC timing(func, title)
DEF t
/* Initialise t as a timer */
Eval(func) /* Evaluate the
expression */
/* Calculate timer difference */
WriteF('Time measured for \s was:
\d\n', title, t)
ENDPROC
```

This procedure is just the outline, showing the important steps and the use of **Eval()**. You'd call it with some of your favourite expressions or function calls as the first argument, and a description string as the second:

```
timing(`x+y, 'addition')
timing(`AllocMem(amount), 'CBM
memory allocation')
d:=`y*
timing(d, 'multiplication')
d:=`myproc(a,b)
timing(d, 'my CPU intensive
procedure')
```

The first two examples pass the address of an expression directly,

JARGON BUSTING

Compilation – the process by which a computer turns symbolic code into machine code.
Exception – erroneous, incorrect or unwanted behaviour.
Gadget – a small button or area of the screen which can be clicked on with the mouse or into which text can be typed.
Library – a collection of commonly used routines for a particular area/part of the Amiga.
Linking – the process by which a computer turns (intermediate) machine code into an executable program.
List – a linearly ordered collection of data. For example, [4,9,5] is a list with 4 as the first element, 9 as the second and 5 as the third.
Mnemonic – a keyword which represents a machine code instruction.
Tag List – a list which can be thought of as grouped in pairs. The first element of the pair denotes a type of data (eg. x position) and the second element gives a value for that data.
Parsing – The process by which a computer turns ASCII text into symbolic code.

but the last two store the address in the variable **d** before using the timing procedure. The backquote character is used to quote an expression and shouldn't be confused with the single-quote charater which is used to delimit a string.

There are several other functions which combine lists and quoted expressions in a Lisp-like way. **MapList(), ForAll()** and **Exists()** do what functional programmers might expect. For instance, the **MapList()** procedure applies an expression to each element in a list. The following call: **MapList({x}, [1,2,3,4,5], res, `x*3)** results in **res** taking the value **[3,6,9,12,15]**. This is because the variable **x** (the first argument) is assigned each value from the list (the second argument) in turn, and the expression (the last argument) is evaluated each time, building up a new list. In other words, this call does the same as the following code: **res:=[1*3,2*3,3*3,4*3,5*3]**.

Without using **MapList()** it's much harder to see that each value in the list is trebled.

E-TYPE.SIMPLICITY

With the type system E uses, there is an obvious trade-off between expressive power and error checking. E uses a very simple variable typing system: most things are either 32-bit long values, or pointers to objects (where an object is the E equivalent of a C or assembly structure). This allows a high degree of low-level polymorphism, in that one variable might represent one of many completely different objects. In C you'd need to do endless casting and generally clutter your program. But there is a downside. The lack of types means that there is very little useful type-checking that can be done by the E compiler, so it won't spot some of the more obvious coding mistakes you make.

WHAT'S E GOOD FOR?

E, like the older and more established C, is specifically targeted at the creation of system applications and utilities. As an example, consider the following E program which uses **EasyRequestArgsA** to make a system requester:

```
PROC main() RETURN
EasyRequestArgs(0,[20,0,0,arg,'OK|
Cancel'],0,NIL)*5
```

This one-liner will compile to executable in a blink (no, you don't need *B-Link*!). If the source file was **request.e** you'd compile with this simple line:

```
1> ec request
```

The resulting executable will be **request** and will only occupy about 580 bytes. Nothing else is needed to run this executable – it stands alone. You'd get it running by typing something like:

```
1> request Shall I delete all your
SAS-C files?
```

This causes a system requester to pop-up with two buttons (**Okay** and **Cancel**) and the message we gave as the argument to **request**. If you select **Cancel** on the requester, 5 (WARN) is returned to AmigaDOS, otherwise zero is returned. You can use this program in AmigaDOS scripts to select different things to do, rather than having to use **ask**.

The E package comes with many useful examples, notably the powerful **dir** replacement (which can sort directory entries and execute commands on matched files), the system supervisor (a mini *Xoper* which lets you see details of the current tasks, devices, libraries, windows and message ports), and the AGA colour utility (which enables you to see the differences between the old ECS and AGA chip sets). Other, smaller examples illustrate how to use various Amiga system libraries (such as **reqtools**, **asl** and **gadtools**) and how to program the Amiga properly in general terms.

For those of us not adept at learning purely by example, E comes complete with a short tutorial and a rather good reference manual, even if it is a little on the terse side. As always, though, there is no substitute for Commodore's own *Rom Kernel Reference Manuals* when learning how to use the Amiga system.

IS THERE AN E FUTURE?

The current version of Amiga E is Version 2.1b. However, Wouter recently released information about the next version (2.5). This will have numerous enhancements (eg. Floating Point Unit support, multiple return values from procedures, and Object Oriented features) and, astonishingly, will compile up to 70 per cent faster and generate even faster executables. Memory consumption during compilation is to be reduced by up to 50 per cent and error reporting will be more accurate. More importantly, this new version will support compilation to modules (like C and assembly object files) for inclusion in other programs. Some major new features such as a source-level debugger may also be included, but this is not definite.

HISTORICAL E SPEAKING

Wouter designed E to be the perfect Amiga programming language because he was fed up with the slow compilation speed of all the other languages he tried. But it didn't all happen overnight – some of you may remember DEX (Fred Fish disks 625 and 743) which is syntactically very similar to E and was Wouter's first major attempt at an Amiga compiler. DEX compiled much more slowly and generated assembly language (which then had to be compiled and linked). E was born because Wouter decided he could do a lot better than DEX.

The other day, I found another of Wouter's compilers. It's called FALSE (after his favourite boolean value) and it's only 1Kb. It's intended as a "toy" langauge (the operators are single characters) and I'm not sure where it fits in the history, but it's pretty good fun in a ZX81 sort of way.

CHAMPING AT THE BIT

If you're still not even the slightest bit interested in trying E, you must have just spent a month's wages on a C compiler. In that case you probably won't want to know that, at present, E is a Public Domain product so it is completely free. Those who *are* interested can get a copy from any decent PD House or from various bulletin boards. The latest version (v2.1b) is on Fred Fish disk 848 – this is a fairly minor update to v2.1 on Fred Fish disk 810.

If you have access to E-mail and you'd like to join the Amiga E mailing list then the address to mail subscription requests to is:

```
amigae-request@bkhouse.cts.com
```

Just ask to be put on the mailing list. You'll get a reply telling you how to contribute to the on-going discussions. Wouter himself regularly contributes by answering questions and helping people with their problems.

SUMMER E

In summary (ho ho bloody ho – *Ed*), if you're serious about programming your Amiga, you should get Amiga E. You won't regret the cost (it's free), you'll marvel at the compilation speed (it's fast) and you'll wonder how it's all done (it's probably very complicated). AS

SHOPPING LIST

E programming language .... PD
Available from any decent PD House or bulletin board.
Fred Fish disk 848

CHECKOUT E

Features
●●●●●●●●●○
Everything but OOP, FPU and 020+ processor support, but that's all coming in the next version.

Documentation
●●●●●●●○○○
A tutorial, reference manual and loads of really good, useful examples. However, the tutorial is a bit short, and the reference manual is a bit too terse in places.

Ease of Use
●●●●●●●●○○
A lot of the features are geared towards readability and ease of use. However, the error reports from syntax checking could be more helpful and at present you need to use an assembly level debugger to debug your code.

Value for Money
●●●●●●●●●●
A complete, powerful language for the price of a floppy disk. Excellent value.

Overall rating
●●●●●●●●●●
The bad points are completely outweighed by the good points.

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MBX 1200 + 68881 = 4Mb 32 RAM cost £310 boxed £240. Vidi Amiga12 AGA boxed £65. Software for both, mint condition, near offers considered. Scala MM 210 incl. key £195. ☎ 0602 234625

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Amiga 4000 two 1Mb Simm modules £75. ☎ 051 334 1873 evenings and weekends.

SSL A5000 accelerator, 68020 + FPU + 4Mb 32 bit RAM under warranty £200. External 3.5-inch disk drive £30. A520 TV-modulator (new) £15. Civilisation £18. Harpoon £14. UMS II £13.Team Yankee £10. Boxed, instructions. ☎ 0734 712285 Reading

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A1500 WB2 3Mb 45Mb hard disk plus monitor. Comes with loads of software final copy PFM + DP3 and games, most already installed on hard disk. £700 ono the lot. ☎ 0374 601658 after 6 evenings.

Amiga A1200, 60Mb hard drive, second disk drive, lots of software and games, boxed as new £350. Also Star LC100 printer £90 or £400 the lot. ☎ 0242 241769

A500, 1Mb, Philips monitor, external drive, 3 joysticks. Many Strategy plus Flight Simulator games. Good condition £285. South Essex. ☎ 0375 891319

Amiga A3000/25 6Mb RAM, NEC multisync monitor, PC emulator, lots of software. Offers. ☎ Tony 0483 769139

Play-By-Mail Wrestling Game. Design your wrestler, win titles! Costs 80p to £1.20 per turn. Contact: U.W.O., 554 Goresbrook Road, Dagenham, Essex, RM9 4XD

A500 Supra RX RAM expansion 0Mb fitted £20 inc p+p. Also D.Paint 4 £30 inc p+p. A500 modulator £15 inc p+p. A500 PSV £40 inc p+p. ☎ Andy, Oxford 748260 evenings or weekends.

A2000 for sale £1500. Twin floppy 80Mb SCSI hard drive £200. 8Mb board for 2Mb £100. AT Bridgeboard £75. Lcloo colour printer £150. CDTV £150 with keyboard drive. ☎ 0356 62038

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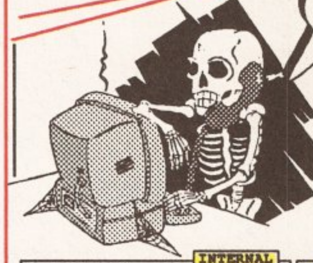
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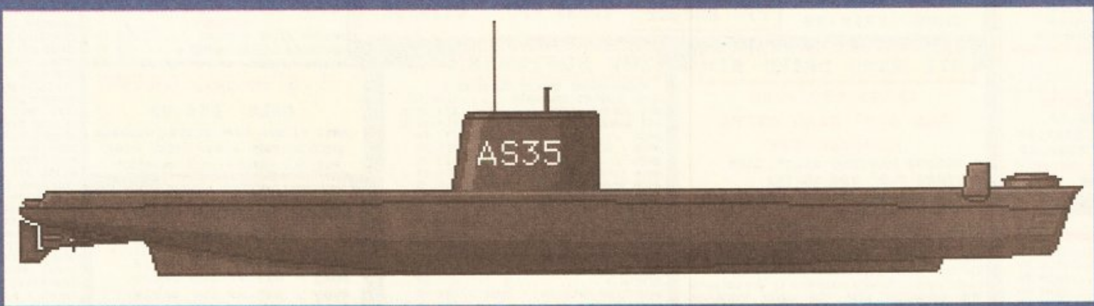
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SAILING THROUGH C

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

With "Create a new record" now up and running, this month's tutorial finds Toby Simpson adding the search facility and ironing out a few bugs.

Search is the main addition this month. The best way to implement this into our program with the minimum number of changes is to make the SEARCH button clear the current record, like CREATE does. This allows us to type in a few parts we want to match before pressing NEXT to search forwards or PREV to search backwards. The key to this is the search routine itself. Its prototype looks a little like this:

```
long search_record_data(long ☛▼
start_record, long direction, ☛▼
char *search_data);
```

It's really quite simple. We pass in a record number to start the search at, the direction in which we'll be going, and a pointer to a record containing the match information. This may be just part of one field, for example "impson" in the Name field, or maybe an entire field, say JB1 7XQ in the post-code field. Or we could just put 071 in the phone number field in order to find everyone who lives in central London. For direction, we have defined two flags in **address_book.h:**

```
/* Search types */
#define SEARCH_FORWARDS 0 /*
Search records forwards */
#define SEARCH_BACKWARDS 1 /* ..
or search them backwards */
```

We can always add further types and special search features in the future. The search routine itself is very easy indeed. Basically, we read in every record from the start record to the end record, which, depending on the direction we're searching in, is either 0 or the value held in **total_records**. Once a record has been read in, we use a function called **strstr()** which finds occurrences of one string in another, to check every field in the record we just read in, and the record containing our match information, like this:

```
while (!done)
  {
  /* Read in record to check
against */
  if (!(read_record_data(match_☛
record, record_id))) return -1;

  /* Check for matches ... */
  match_ptr = match_record;
  search_ptr = search_data;

  for (loop = 0; loop < ☛▼
TOTAL_FIELDS; loop ++)
    {
    if (strstr(match_ptr, ☛▼
search_ptr))
      {
      /* Match found, return it  */
      return record_id;
      }
```

The **strstr()** function works a little like this:

```
char *strstr(char *string1, ☛▼
char *string2)
```

If **string2** exists in **string1** then the function returns a pointer to the place where it occurred. If it did not, then it returns NULL. So we are able to say, "If the result of **strstr()** is NON-ZERO (that is, we found it), return this record ID". Also, note that where we read the record data in, we do check the return value in case of an error. If the match fails, we move onto the next field in the search record and the match record:

```
match_ptr = match_ptr + ☛▼
field_lengths[loop];
search_ptr = search_ptr + ☛▼
field_lengths[loop];
}
```

As we've done before, we simply add the length of the next record to the two pointers. Note that we used this technique a lot in our earlier CLI based routines for creating and viewing records. If no match is found in any of the fields, we move to the next record:

```
/* Move to next record */
record_id = record_id + loop_step;

/* Check if done */
if (record_id == (total_☛
records + 1) || record_id == -1)
  done = TRUE;
}
```

loop_step is either equal to -1 or 1, depending on which direction we're searching. At the start of the search routine we set the loop_step variable accordingly, like this:

```
/* Default a start position */
if (start_record == -1)
  start_record = 0;

/* Set the loop direction
correctly */
if (direction == SEARCH_FORWARDS)
  loop_step = 1;
else
  loop_step = -1;

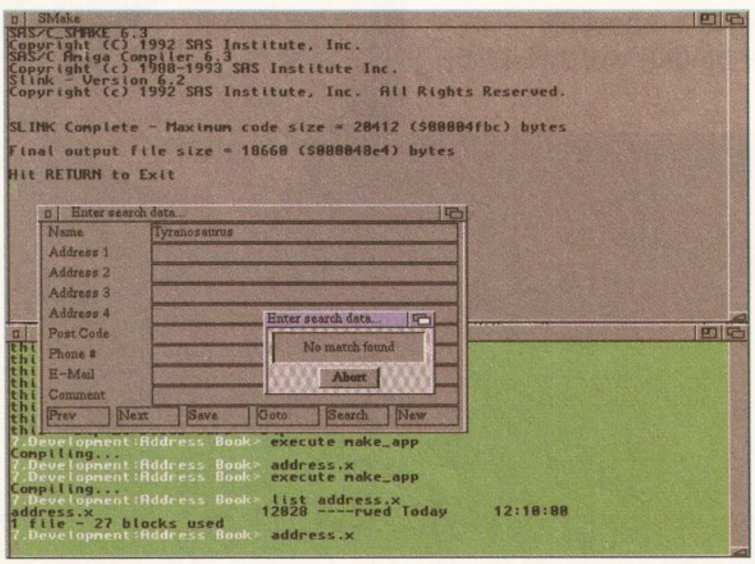
/* Loop through records till done
*/
record_id = start_record;
```

Note that initially, we check to see if the record number is invalid, and if so, set it to 0 as default. This could happen, for example, if the user clicked on **search** and then **next/prev** without actually showing any records first. It's a safety check — and its better to be safe than sorry! Then we set the **loop_step** value, and finally, before the actual search loop itself, set the **record_id** variable to the start-point.

But how do we kick off a search in the first place? Well, as mentioned earlier, we'll interface it into the program in pretty much the same way in which we did **create**. That is, when we press **search**, all the fields are cleared, and we can enter the data that we want to search for. The actual code which occurs when the search button is pressed looks like this:

```
case BTN_SEARCH:
/*
**Search for data*/
if (record_changed){
  /* Ask if OK to lose changes */
  if (!(YesOrNo("Ok to lose ☛▼
changes?", "Yes", "Cancel")))
    break;
}
search_flag = TRUE;
new_flag = FALSE;
record_changed = FALSE;
show_current_record(record_☛
data, CREATE_SEARCH);

/* Activate first string gadget */
```



The Search facility in action. It would appear that we don't have a tyranosaurus anywhere on our list!

```
ActivateGadget(&window_gads☛
[0], addr_window, NULL);
break;
```

It's very straight forward. Note that we've added a new parameter for **show_current_record, CREATE_SEARCH**. This is defined in **address_book.h** as -2. **show_current_record** now decides what to do by looking for both **CREATE_NEW** and **CREATE_SEARCH**. Take a look in **address_gui.c** to see what the changes are and note the new **switch()** statement in there at the end to decide on the correct window title value – it will be handy for future expansion.

As with **create**, we first check if the user is about to lose any changes by selecting search, and ask them to confirm this. Then we set our search flag, clear the fields on screen, and then activate the first gadget ready to type.

The key event happens when the user presses **NEXT** or **PREV** because, if our flag **search_flag** is set at this point then, instead of moving to the next or previous record as we would normally do, it searches for the next match. Lets look at the code which happens when we press **NEXT**, which would be "search forwards from this point..."

```
/*
** Goto Next Record
*/
if (search_flag)
  {
  /* Search backwards */
  record_changed = FALSE;
  match_id = search_record_data(☛
current_record, SEARCH_☛
FORWARDS, record_data);

  if (match_id == -1)
    YesOrNo("No match found", ☛▼
NULL, "Abort");
  else
    current_record = match_id;

  show_current_record(record_☛
data, current_record);
  search_flag = FALSE;
  break;
}
```

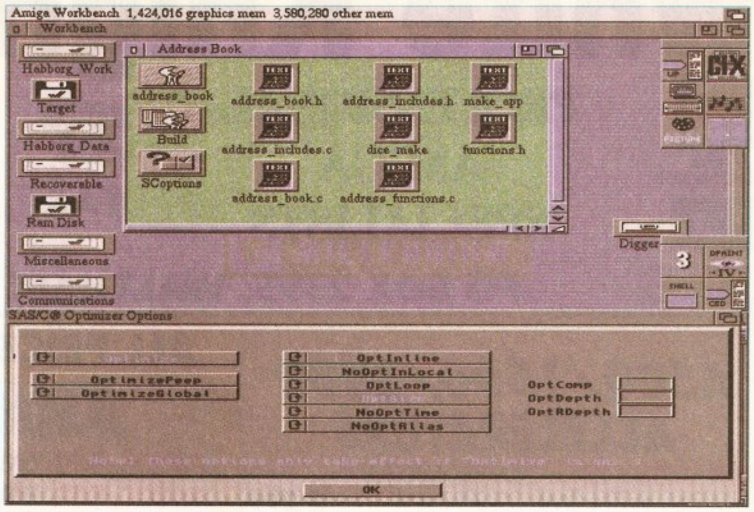
So, if we press **next** with our search flag set, we attempt to find the next matching record. If we succeed, we make it the current record and show it. If not, a brief requester saying that we could not get a match appears.

As searches go, it could do with a few refinements and these are relatively easy to make as the core search routine is quite flexible. For example, after finding a match, you might like to show a requester saying "Continue search? YES/NO".

GOTO is the last key feature that we said we'd work on and I'm holding off on that for now because I want to use it as an example of how to save yourself work next month by using an external support library. This library will work for both 1.3, 2.04 and above — it makes tasks like inputting numbers and strings very easy indeed. It also gives you a way of tidying up the requesters a touch under 1.3.

ENHANCEMENTS

This address book application is far from perfect. The limitations of 1.3 make life so much harder for the programmer as everything has to be done in long-hand. Additionally, the basic planning was not detailed enough so that we have ended up with a particularly long-winded main loop in **address_book.c.** It works fine, as you can see, but if we wanted to continue adding feature upon feature, it would really need to be re-written and made more efficient. We have pretty much finished as far as the basic Address Book application is going to go, although we'll continue to make small changes over the next few issues. You may like to re-organise the **address_book.c** module, and put a lot of the main **IDCMP switch()** parts into separate routines.



SAS C makes it easier to tweak options, using a proper GUI to control the compiler options. The source code to this month's Address Book is on the Cover Disk.

Next month we'll be delving into 2.04 of the Amiga operating system, and looking at a few of its features to see just how much time and effort they can save. Also, we'll have a look at tools which write parts of your program for you — great time savers and some of them make designing your GUI far easier. To top it off, we'll briefly check out 3.0.

COMPILING THIS MONTHS PROGRAM

The source code on the cover disk has been compiled and tested using *Dice 2.06.21* and *SAS C 6.3*. It is ANSI C and should compile with little or no alteration using any Amiga C compiler. A special AmigaDos script is provided to compile using *Dice*, which can be run by typing:

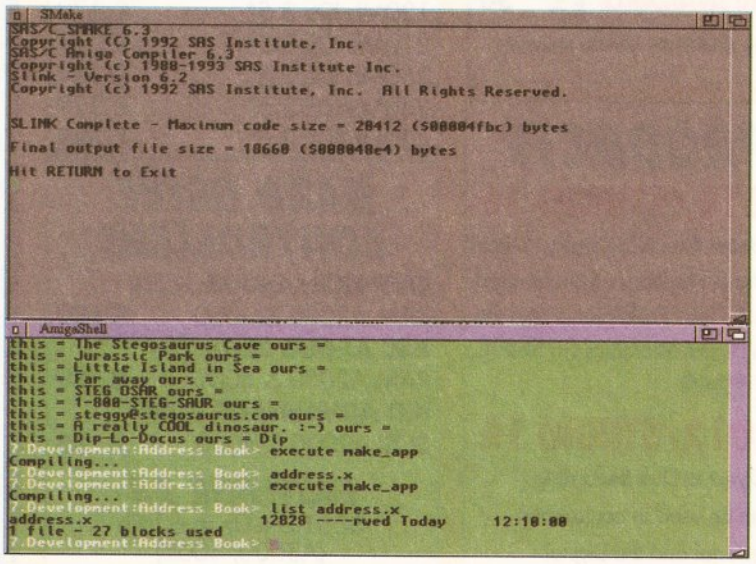
```
execute make_app
```

... from the shell, so long as you are in the drawer containing the address book source and the **make_app** script file. This month, you'll also be able to compile the address book using *SAS C 6.3*. All you have to do is run the *Build* program supplied as part of the archive and everything will happen automatically.

Shareware *DICE* users will require the *Commodore Include Files*. The *Amiga Developers Kit, version 3.1* is now available. In addition, the backlog from last year is now being cleared and is on sale for £23.00. The kit includes the latest autodocs on disk, loads of utilities, the linker libraries, example code, and of course, the includes themselves. To get hold of one, send a cheque made payable to Commodore Business Machines (UK) Ltd to: Sharon McGuffie,Commodore Business Machines UK Ltd,Commodore House, The Switchback, Gardner Road, Maidenhead, Berks SL6 7XA

PROBLEMS

We heard last month of a reader who was having some problems trying to get the Address Book to compile using the commercial SAS-C product. It turns out that some of the prototypes and function definitions were slightly incorrect and this could have caused some serious problems. Unfortunately DICE does not spot these, whereas SAS, which is a proper ANSI-C compiler, expects things to be organised in a specific way. Needless to say the faults were quite easy to fix and they have been for this months program which has been compiled and tested using both Dice 2.06.21 and SAS C 6.3.



Using DICE and SAS C to compile the program. The picture also shows some debuggin information from the development of the search routine.

JARGON BUSTING

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AMOS action

This year is already shaping up to be a great one for AMOS with lots of goodies lined up for release over the next 12 months. Not one, but two AGA extensions are due for release any day now.

As revealed in last month's column, Francois Lionet is hard at work on an update for AMOS Professional which will allow AMOS coders to take full advantage of the capabilities of the AGA chip set.

Meanwhile, for those of you who still haven't upgraded to AMOS Professional (why not? It's so cheap these days!), Aaron Fothergill's AMOS Club is soon to release an extension for AMOS Classic which will not only add full support for the AGA chip set, but Intuition too.

Rest assured that as soon as I have received review copies of these extensions, I'll be pitting them against each other in a tough, no-holds-barred review.

The AMOS books scene is picking up too. Not only has my own AMOS tome, *Ultimate AMOS*, started shipping (buy it now! – see the advertisement elsewhere in this issue) but I have recently heard rumours that there are two new books in the pipeline.

Indeed, Len and Anne Tucker (of *Totally AMOS* fame) have just released a new book called *AMOS in Education* that – as its name suggests – takes you step by step through the techniques involved in programming educational software. And for this you need nothing more than AMOS itself and a copy of *DPaint*!

Jason Holborn enhances Amiga Shopper's already brilliant paint program with a step-by-step guide to coding a colour palette editor, complete with listing. Plus news of two brand new AMOS extensions heading your way soon – AGA here we come!

ASPAINT REVISTED

While everyone else was tucking into the turkey and sipping the sherry over Christmas, yours truly was hard at work coding the latest installment of *ASPaint*, the *Amiga Shopper* paint program written using Europress's AMOS. Up until now, the colour palette used within *ASPaint* has been fixed. Although it's a very useable palette (which bears a striking resemblance to *DPaint*'s own default palette), the fixed palette is somewhat restricting. This month we add a new section of code that extends the usefulness of *ASPaint* immeasurably – a colour palette editor.

Coding this little beauty proved to be quite a challenge, but you'll find the complete code listed overleaf. I had hoped to make it just as powerful as *DPaint's* colour palette editor but it proved to be just too code-intensive. So *ASPaint's* colour palette editor will allow you to select a colour, edit it and that's basically your lot.

If you fancy extending it to include such *DPaint*-like features as 'Exchange' (swaps two colours) and 'Spread' (creates a spread of colours between two colours) then why not have a go and, if you're successful, send your version of *ASPaint* into *Amiga Shopper* – it may even end up on the coverdisk!

Anyway, let's take a look at the colour palette editor code.

1. Unlike previous months, I've cut out the start of the program simply because we don't need to make any 'global' variable declarations. However, additions do have to be made to the **_PROCESSTOOLS** procedure so that *ASPaint's* gadget handling routine recognises our new code.

2. If the user clicks on the *ASPaint* toolbox 'P' gadget, the variable **SELECTED** will contain a value of seven. In order to jump to our new code, we therefore check the value of this variable to make sure that it is seven.

3. If **SELECTED** does contain a value of seven, the **_PROCESSTOOLS** procedure jumps to a procedure called **_PALETTEREQ** that, not surprisingly, contains our palette requester code.

4. With the additional code in place, we're almost ready to get started with the new **_PALETTEREQ** procedure.

5. Before we go any further, however, we need to define a couple of local variables that will be used within this procedure. The first variable is **QUIT** – it's used as a flag to indicate when the **CLOSE** gadget is selected. When the **QUIT** variable contains a value of one, the continuous loop that holds the gadget handling code is broken.

6. The **CLR** variable is very important too because it holds the number of the colour that is currently being edited. When the procedure starts, this variable is loaded with the number of the colour selected. This ensures that when the colour palette editor is first displayed, it automatically selects the current colour.

7. The first thing we need to do is to open a screen that will hold the palette editor. After a low-resolution screen with just eight colours has been opened, AMOS's automatic colour cycling and cursor are then turned off and the screen is cleared using colour one.

8. To give our application a uniform look, the same colour palette used by the *ASPaint* toolbox is loaded into the requester screen.

9. The palette requester screen is then positioned near the bottom of the display using the AMOS **SCREEN DISPLAY** command.

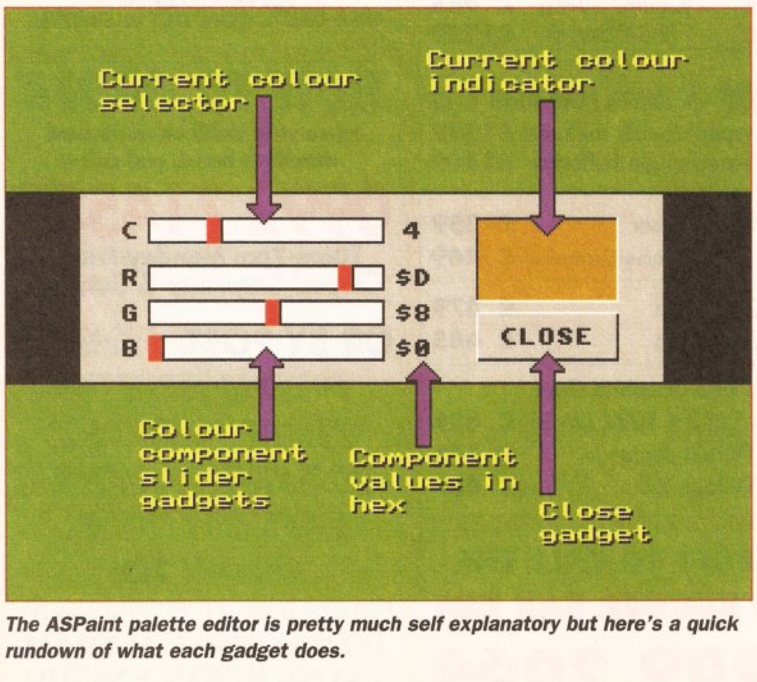
10. In order to display the colour that you're editing, a block is drawn onto the right hand side of the palette editor screen using colour five. Because the **CLR** variable is already loaded with the number of the current colour, we set colour five to the colour setting of the canvas screen by reading the palette information from the **PALTTE()** array.

11. In order to display the red, green and blue values of the current colour, we need to read the value of the current colour into a variable called **RGB$** as a hex value.

12. Each of the three colour components (red, green and blue) is extracted from the hex value using the **MID$** function.

13. Now we need to initialise the requester's screen display. The first step is to cut down the apparent size of the screen by drawing two filled boxes on either side of the screen to limit the display to a small rectangle in the centre of the screen.

14. Our colour palette requester needs five gadgets, each of which is handled as an AMOS 'screen zone'. Before we can define our screen zones, however, we tell AMOS how much memory to set aside for their definitions using the **RESERVE ZONE** command.



The ASPaint palette editor is pretty much self explanatory but here's a quick rundown of what each gadget does.

15. Four of the gadgets used by the palette editor are slider (proportional) gadgets that are drawn using AMOS's **HSLIDER** command. The default style of these gadgets is rather dull, so we use the **SET SLIDER** command to initialise the 'look' of all our slider gadgets.

16. The first slider (the colour selector) is defined using the **HSLIDER** command.

17. AMOS doesn't automatically handle slider gadgets for us, so we need to write the slider gadget code ourselves using AMOS's 'screen zones' facility. The space taken up by each slider gadget is defined as a screen zone using the **SET ZONE** command.

18. Now we display the three colour component sliders starting with the "red" slider gadget. The slider is firstdisplayed and then its screen zone is defined.

19. We then do the same thing with the "green" colour component slider gadget...

20. ...and the "blue" colour component slider gadget.

21. With all four slider gadgets defined, we draw the current colour display gadget onto the screen using a combination of the AMOS **BOX**,**BAR** and **DRAW** commands. Note how the centre of the gadget is drawn using colour five.

22. The gadget imagery of the screen **CLOSE** gadget is then drawn using exactly the same technique.

23. The area of the screen that is used to hold the **CLOSE** gadget is then defined as a screen zone.

24. With all five gadgets now drawn onto the screen, all that remains is to print all the requester text onto the screen. We could have used the AMOS **PRINT** command for this but **TEXT** is used instead so that we can position the text with pixel-perfect accuracy.

25. Now that the colour palette editor's screen has been drawn, the routine then enters a loop that is performed until the user clicks on the **CLOSE** gadget. The code within this loop is responsible for handling the operations of the gadgets that we defined.

26. Obviously there's not much point in checking to see whether the palette editor's gadgets have been selected if the mouse pointer is not over the palette editor's screen so we look at the value returned by the **MOUSE SCREEN** function. If the value returned is two (indicating screen two), the code within the **IF...THEN** construct is performed.

27. The first gadget that the routine checks is the colour selector slide bar. In order to process the slide bar, the mouse pointer must be over the gadget and the user must be pressing the left mouse button.

28. In order to find which colour the user has selected, a simple calculation is performed. This involves reading the current position of the mouse pointer within the gadget, subtracting 60 and dividing that number by the number of colours available. The resulting value is placed into the variable **X**.

29. The AMOS **HSLIDER** has a habit of returning values that are out of range so we check the value held in the **X** variable against the maximum number of colours available.

30. If the value is out of range, it is rounded down so that it is equal to the highest colour available.

31. AMOS won't automatically adjust the position of the slider gadget's 'handle' so we have to do this ourselves by redrawing the gadget with the handle in its new place. To keep everything running smoothly, this is tied in with the refresh of the screen.

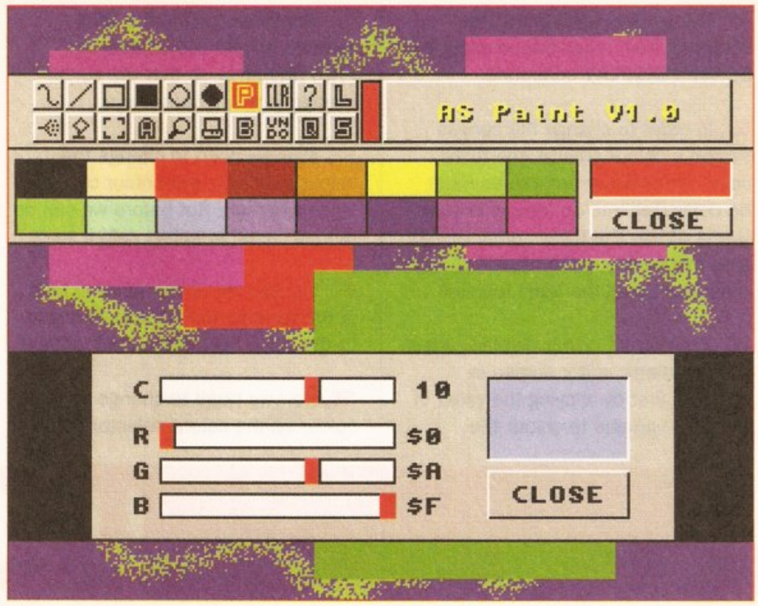
32. The value held in the **X** variable is then transferred into the **CLR** variable, effectively changing the current colour setting.

33. The colour selector slider isn't the only gadget that needs to be redrawn. In order for the three colour component sliders to be redrawn, we need to calculate the settings of each colour component by reading the setting of the current colour from the **PALTTE()** array which is then converted to hex and divided into three separate hex digits, one for each colour component.

34. The three colour component gadgets are then redrawn so that their 'handles' reflect the value of the new current colour.

35. The number of the current colour and the hex values of the three colour components are then redrawn onto the screen using the **TEXT** command.

36. Now that the colour selector slider gadget is complete, the code moves onto the first of the colour component sliders. Just like the colour selector, the routine starts by checking to make sure that the mouse pointer is both over the 'red' component slider and the user is pressing the left mouse button.



Wow, DPaint eat your heart out! With our palette editor now in place, ASPaint is shaping up into a powerful paint program.

37. In order to find the setting of the red colour component that the user has selected, a simple calculation is performed which reads the current position of the mouse pointer within the gadget, subtracts 60 and then divides it by 16 (the maximum number of combinations. The resulting value is placed into the variable **X**.

38. The value held in **X** is then checked to make sure that it is not greater than 15. If it is, it is rounded down to 15 so that the colour component is set to maximum.

39. Just like the colour selector, the red component slider needs to be redrawn so that it reflects the new colour setting.

40. The new hex value of the red colour component is then redrawn next to the slider gadget so that it reflects the new setting.

41. The hex value of the red colour component is then saved into the variable **RED$**. This value will later be used to set the current colour to the new colour setting on the main 'canvas' screen.

42. The same gadget handling technique is then repeated for the 'green' colour component...

43. ...and the 'blue' colour component.

44. The last gadget that needs to be checked is the **CLOSE** gadget which closes the palette editor screen. To see whether this gadget has been selected, the position of the mouse pointer and the status of the left mouse button is checked.

45. The drawing mode is first changed to 'inverse' mode.

46. A filled box is then drawn over the **CLOSE** gadget, effectively inversing the gadget imagery. The program then waits for four vertical blanks before proceeding.

47. The **QUIT** variable is then set to one so that the **REPEAT...UNTIL** loop ends.

48. Just like the toolbox screen, the palette editor screen can be dragged up and down the display with the mouse. All you have to do is click on any part of the palette editor screen that doesn't have a gadget on it and then, whilst holding down the left mouse button, move the mouse pointer up or down. In order to make sure that the user does want to drag the screen, the **MOUSE ZONE** function is checked to make sure that it contains a value of zero (indicating that the mouse pointer is not over a gadget) and the **MOUSE KEY** value is checked to make sure the left mouse button is being depressed by the user.

49. In order to 'fix' the position of the screen to the mouse pointer, an offset value is stored into a variable called **YOFF**.

50. The routine then enters a loop performed over and over again until the user lets go of the left button.

51. The first thing the loop does is read the current 'Y' position of the mouse pointer. The value held in **YOFF** is then subtracted from this.

52. The vertical position of the screen is then repositioned using the **SCREEN DISPLAY** command.

53. In order to change the canvas screen's colour palette, the three colour component hex values must be converted into an integer between 0 and 4096. The three components are combined and then converted to a number using the **Val()** function.

54. The current colour display gadget on the palette editor screen is changed first by copying the value in the **RGB** variable to colour five.

55. The value held in the **RGB** variable is then copied into the **PALTTE()** array so that the colour change is made pernament.

56. Now we need to change the colour of the current colour on the canvas screen. But before we can do this, we need to select colour zero.

57. The current colour number held in the variable **CLR** is then changed to the value held in the **RGB** variable.

58. Now we need to change the colour on the colour selector screen. It may not be open, so we first check that it is open by making sure that the variable **COLSELECT** contains a value of one. If it does, the current screen is changed to screen one and the colour setting is changed.

59. The toolbox 'current colour' display needs to be changed too if the current drawing colour matches the colour that is currently being edited. If it does, the current screen is changed to screen seven and the value of colour four is changed.

60. With all the colour changes made, the routine then changes the current screen number back to reactivate the palette editor gadgets.

61. If the variable **QUIT** contains a value of one, the loop is terminated and the palette editor screen is closed. The palette editor is then effectively turned off, allowing the user to continue painting. AS

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

LISTING

```
1. Procedure _PROCESSTOOLS[SELECTED]
 If SELECTED=1
 _FREEHANDDRAW
 End If
 If SELECTED=12
 _FILLAREA
 End If
 If SELECTED=2
 _LINEDRAW
 End If
 If SELECTED=3
 _OUTLINEBOXDRAW
 End If
 If SELECTED=4
 _FILLEDBOXDRAW
 End If
 If SELECTED=5
 _OUTLINECIRCLEDRAW
 End If
 If SELECTED=6
 _FILLEDCIRCLEDRAW
 End If

2. If SELECTED=7
3. _PALETTEREQ
 End If

 If SELECTED=11
 _AIRBRUSH
 End If
 If SELECTED=8
 _CLEARIMAGE
 End If
 If SELECTED=13
 _GRABBRUSH
 End If

 If SELECTED=18
 _UNDO
 End If
 End Proc
 '
4. Procedure _PALETTEREQ
5. QUIT=0
6. CLR=CURCOLOR

7. Screen Open 2,320,80,8,Lowres
 Flash Off : Curs Off : Cls 1
8. Palette $0,$AAA,$FFF,$FF0,$ECA,,$F00,$FF0
9. Screen Display 2,,200,,

10. Colour 5,PALTTE(CLR)

11. RGB$=Hex$(PALTTE(CLR),3)
12. RED$=Mid$(RGB$,2,1)
 GREEN$=Mid$(RGB$,3,1)
 BLUE$=Mid$(RGB$,4,1)

13. Ink 0
 Bar 0,0 To 30,80
 Bar 280,0 To 320,80

14. Reserve Zone 5
15. Set Slider 1,2,0,1,0,2,6,0
16. Hslider 60,10 To 160,20,CLOURS,CLR,1
17. Set Zone 1,60,10 To 160,20

18. Hslider 60,30 To ▼☛
160,40,16,Val("$"+RED$),1
 Set Zone 2,60,30 To 160,40

19. Hslider 60,45 To ▼☛
160,55,16,Val("$"+GREEN$),1
 Set Zone 3,60,45 To 160,55

20. Hslider 60,60 To ▼☛
160,70,16,Val("$"+BLUE$),1
 Set Zone 4,60,60 To 160,70

21. Ink 0 : Box 200,10 To 260,45
 Ink 5 : Bar 201,11 To 259,44
 Ink 2 : Draw 260,10 To 260,45
 Draw 200,45 To 260,45

22. Ink 0 : Box 200,50 To 260,70
 Ink 2 : Draw 200,50 To 260,50
 Draw 200,70 To 200,50

23. Set Zone 5,200,50 To 260,70

24. Ink 0
 Text 210,63,"CLOSE"
 Text 48,18,2C"
 Text 48,38,"R"
 Text 48,53,"G"
 Text 48,68,"B"
 Text 161,18,Str$(CLR)+" "
 Text 165,38,"$"+RED$
 Text 165,53,"$"+GREEN$
 Text 165,68,"$"+BLUE$

25. Repeat
26. If Mouse Screen=2
27. If Mouse Zone=1 and Mouse Key=1
28. X=(X Screen(X Mouse)-60)/(100/CLOURS)
29. If X>CLOURS-1
30. X=CLOURS-1
 End If
31. Hslider 60,10 To 160,20,CLOURS,X,1

32. CLR=X
33. RGB$=Hex$(PALTTE(CLR),3)
 RED$=Mid$(RGB$,2,1)
 GREEN$=Mid$(RGB$,3,1)
 BLUE$=Mid$(RGB$,4,1)

34. Hslider 60,30 To ▼☛
160,40,16,Val("$"+RED$),1
 Hslider 60,45 To 160,55,16,Val("$"+GREEN$),1
 Hslider 60,60 To 160,70,16,Val("$"+BLUE$),1
 Wait Vbl

35. Text 161,18,Str$(CLR)+" "
 End If
36. If Mouse Zone=2 and Mouse Key=1
37. X=(X Screen(X Mouse)-60)/(100/16)
38. If X>15
 X=15
 End If
39. Hslider 60,30 To 160,40,16,X,1
 Wait Vbl
40. Text 165,38,Hex$(X)
41. RED$=Mid$(Hex$(X),2,1)
 End If
42. If Mouse Zone=3 and Mouse Key=1
 X=(X Screen(X Mouse)-60)/(100/16)
 If X>15
 X=15
 End If
 Hslider 60,45 To 160,55,16,X,1
 Wait Vbl
 Text 165,53,Hex$(X)
 GREEN$=Mid$(Hex$(X),2,1)
 End If
43. If Mouse Zone=4 and Mouse Key=1
 X=(X Screen(X Mouse)-60)/(100/16)
 If X>15
 X=15
 End If
 Hslider 60,60 To 160,70,16,X,1
 Wait Vbl
 Text 165,68,Hex$(X)
 BLUE$=Mid$(Hex$(X),2,1)
 End If
44. If Mouse Zone=5 and Mouse Key=1
45. Gr Writing 3
46. Bar 200,50 To 260,70
 Wait 4
47. QUIT=1
 End If
48. If Mouse Zone=0 and Mouse Key=1
49. YOFF=Y Screen(Y Mouse)
50. Repeat
51. Y=Y Mouse-YOFF
52. Screen Display 2,,Y,,
 Wait Vbl
 Until Mouse Zone<>0 or Mouse Key=0
 Else
53. RGB=Val("$"+RED$+GREEN$+BLUE$)
54. Colour 5,RGB
55. PALTTE(CLR)=RGB

56. Screen 0
57. Colour CLR,PALTTE(CLR)
58. If SELECTCOL=1
 Screen 1
 Colour CLR,PALTTE(CLR)
 End If
59. If CLR=CURCOLOR
 Screen 7
 Colour 4,PALTTE(CLR)
 End If
60. Screen 2
 End If
 End If
 Until QUIT=1

61. Screen Close 2
 End Proc
```

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Six appeal

Jeff Walker finds out if the latest, much-improved version of Protext has proved the case for text based word processors.

There can't be many Amiga owners who haven't heard of *Protext*, the word processor produced by Arnor Ltd. While most rival word processors for the Amiga have only progressed as far as second and third versions, *Protext*, first released on cassette in 1985 for the Amstrad CPC464, is now in its sixth incarnation.

Previous versions of *Protext* have been criticised for not looking or feeling like a normal Amiga application. This is because *Protext* is available for different makes of computer and has been designed to look and work in much the same way on each one. The idea was to make users feel at home if they had to switch from one type of computer to another. However, this created a problem when the massive advances that came with Workbench 2 and 3 left *Protext* a little behind the times.

For its latest Amiga version of *Protext*, Arnor set itself the task of bolting on a more attractive, user-friendly graphical user interface (GUI), and adding new features without changing the classic *Protext* command line interface.

A glance at the *Protext 6* screen makes you think little has changed, but behind the familiar façade there has been some major surgery.

DOCUMENT SETTINGS

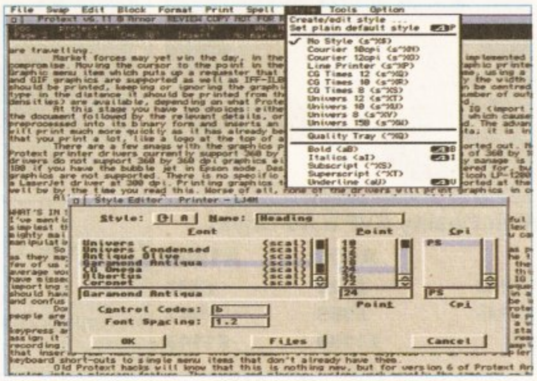
Previously the document settings were set up with either the separate **Config** utility or via the stored commands. You can still do things this way but the new **Document Settings** requester (or dialogue box as the manual insists on calling it after the Windows™ nomenclature) makes it easier to change global settings like paper size, the default text style, margins, formatting options and headers and footers. *Protext's* measurement system used to be a number of characters across the document and a number of pages/lines down it – now you can use inches or centimetres instead which makes it much easier to work with a fixed-width font on-screen while printing with proportionally spaced printer fonts.

Headers and footers are now a lot easier to set up. Two neat requesters enable you to specify up to nine lines each for odd-page and even-page headers, and odd-page and even-page footers. These are global document settings so, if you want to switch headers/footers on and off at different points in the document, or even completely change the style or content of headers/footers part way through a document, you will have to use the stored commands. No other Amiga word processor enables you to alter these details.

Document settings are saved with the document, but they can be saved as separate settings files as well if you like.

For printers that have a landscape page orientation built in (mainly modern DeskJets and LaserJets), there is a Landscape button in the **Document Settings** requester which automatically swaps the page width and height dimensions around.

I mentioned that the default text style can be set in the **Document Settings** requester and these styles are another new feature of version 6. *Protext* uses its own kind of printer drivers, not standard Workbench ones. While this can be seen as a disadvantage, it does mean that Arnor can give you complete control over the hundreds of printers supported by *Protext* — these include popular modern printers made by Star, Citizen, Hewlett-Packard, Canon and so on. Because *Protext* printer drivers know what fonts are built into your printer, you can use any of them at any point in a document. A new **Styles** feature enables you to select a font, a size, a line spacing and some control codes (bold, italic and so on) and tie them to a named style, which then appears in the **Styles** menu. Up to 26 styles can be created.



Styles are a major addition to version 6. Up to 26 of them can be defined and added to the Styles menu.

Whether you own a printer that contains just a few small fonts, lots of fonts in different sizes or scalable fonts like the Epson Stylus 800, *Protext* will enable you to make the most of them. For example, you could set up a large, bold heading style; a little italicised header/footer style; a special style for tables; another for technical jargon and yet another for important details. Applying these styles is as simple as selecting them from the **Styles** menu. The *Protext 6* manuals use styles extensively (printed on a LaserJet 4L) and they are an excellent example of the kind of professional quality work that can be created very easily indeed.

There is, however, a fly in the ointment. While *Protext* supports colour printers and enables you to print any style in any colour, the colour of the text is not part of the style and has to be applied separately. When quizzed about this oversight, Arnor said that it would be fixed as soon as possible.

Before leaving text styles, I should briefly point out that a small number of colour printers can't print coloured text from *Protext*. Among these, unfortunately, are the popular DeskJet 310 and 500C. But the 550C can print coloured text as can the Canon colour bubble jets and the 9/24-pin Epson compatibles made by Star, Citizen, Panasonic *et al*. *Protext* supports most of these although the SJ-144 colour thermal printer from Star is not listed.

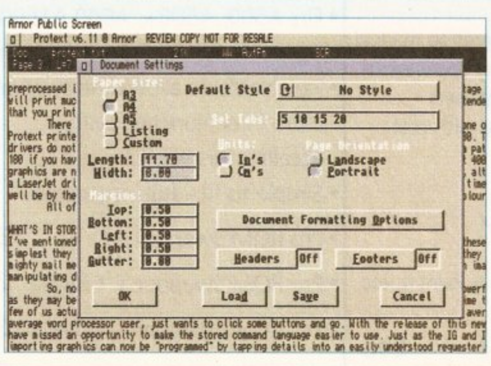
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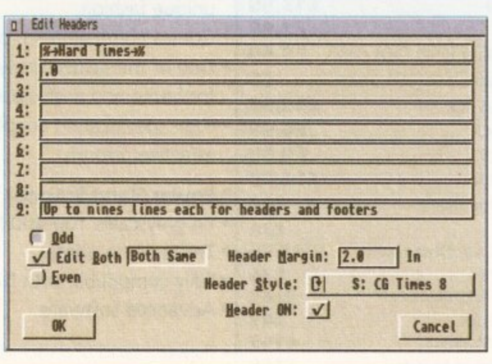
Support for graphics is a feature that many *Protext* users have been

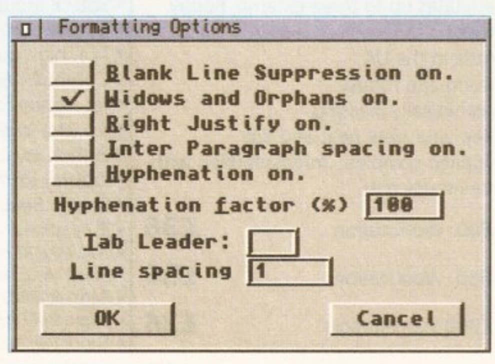
continued on page 80

GET IT STRAIGHT

No more messing with stored commands to set up your page sizes and margins – the new Document Settings requester even includes facilities for Landscape printers and for setting your headers and foooters.







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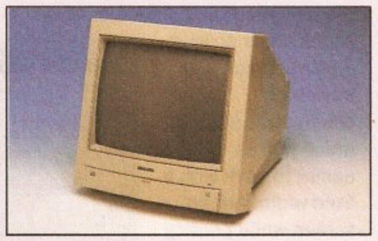
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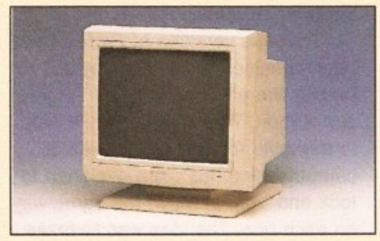
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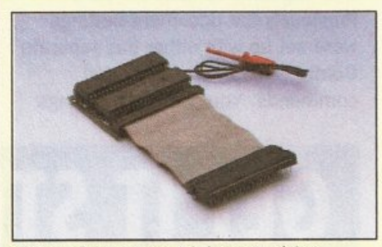
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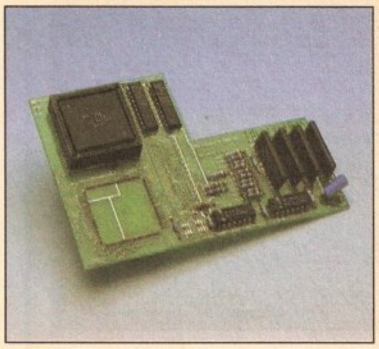
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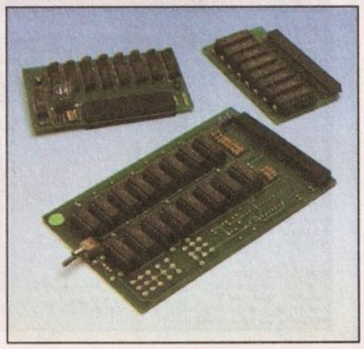
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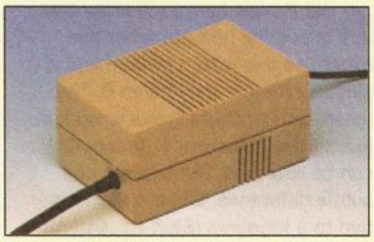
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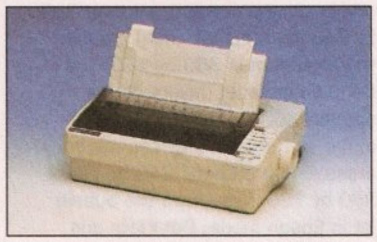
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continued from page 77

campaigning for. They want WYSIWYG (What You See is What You Get) graphics, but Arnor quite correctly states that this will consume stacks of memory which will slow the program down. *Protext* is a text based word processor; its strength has always been its speed and superb text editing features. Arnor is loath to push *Protext* along the same semi-desktop publishing road being travelled by *Wordworth* and *Final Copy*.

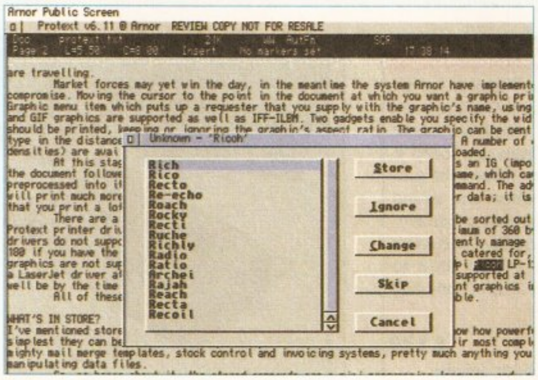
Market forces may yet win the day but, in the meantime, the system Arnor has implemented seems a fairly happy compromise. Moving the cursor to the point in the document at which you want a graphic printed, you select the **Import Graphic** menu item which puts up a requester that you supply with the graphic's name, using a file requester if you like. PCX and GIF graphics are supported as well as IFF-ILBM. Two gadgets enable you to specify the width and height at which the graphic should be printed (keeping or ignoring the graphic's aspect ratio). The graphic can be centred, right justified or you can type in the distance it should be printed from the left edge of the document. A number of output resolutions (print densities) are available, depending on what *Protext* printer driver you have loaded.

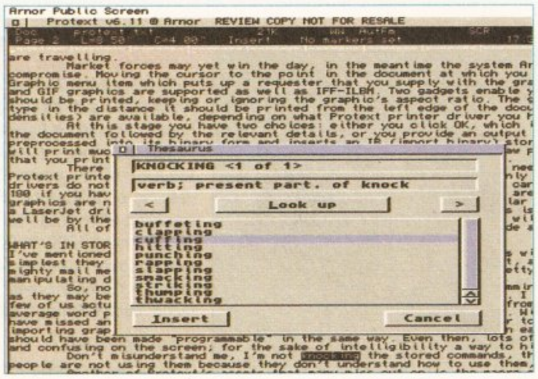
At this stage you have two choices: either you click OK, which inserts an IG (import graphic) stored command into the document followed by the relevant details, or you provide an output filename, which causes the graphic to be preprocessed into its binary form and inserts an IB (import binary) stored command. The advantage of IB is that the graphic will print much more quickly as it has already been processed into raw printer data. It is intended for use with graphics that you print a lot, such as a logo at the top of a letter.

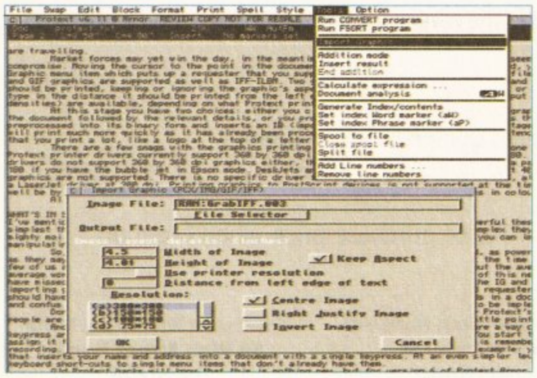
There are a few snags with the graphics printing system which need to be sorted out. For instance, none of the Epson compatible *Protext* printer drivers currently support 360 by 360 dpi (dots per inch) graphics – the maximum is 360 by 180. The Canon bubble jet drivers do not support 360 by 360 dpi graphics either — the best they can currently manage is a pathetic 240 by 72, or 360 by 180 if you have the bubble jet in Epson mode. DeskJets and LaserJets are well catered for but 400 and 600 dpi LaserJet graphics are not supported. There is no specific driver for the popular 400 dpi Ricoh LP-1200 although this will work with a LaserJet driver at 300 dpi. At the time of writing, printing graphics to PostScript devices is not supported. Perhaps the biggest drawback is that none of the drivers will print colour graphics. However, Arnor is working on all these and upgrades will be available soon.

CHECK MATE

The new spelling checker and thesaurus requesters are simple but functional. Cursor keys can be used to move up and down the list; Return puts the the highlighted word into the document.







The much requested Import Graphics feature. If Protext is to continue to be a major player in the Amiga market, this needs to be extended. A Preview Graphic option would not have gone amiss.

WHAT'S IN STORE?

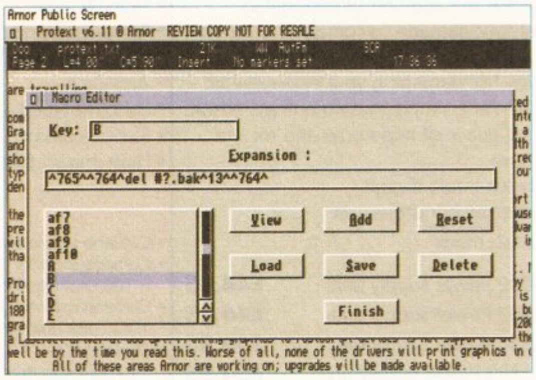
I've mentioned stored commands a few times and experienced *Protext* users will know how powerful these can be. At their simplest, they can be used to change page layout settings mid-document; at their most complex, they can be used to write mighty mail merge templates, stock control and invoicing systems.

Let's make no bones about it, the stored commands are a mini programming language, and, powerful and deeply wonderful as they may be, they turn a lot of people away from *Protext*. I mean, who's got the time to learn to program? Okay, a few of us actually enjoy the challenge and get our spare-time kicks from programming, but the average user – especially the average word processor user – just wants to click some buttons and go. With the release of this new version of *Protext*, Arnor has missed an opportunity to make the stored command language easier to use. Just as the IG and IB stored commands for importing graphics can now be "programmed" by tapping details into an easily understood requester, so the rest of them should have been made "programmable" in the same way. Even then, lots of stored commands in a document can make it look ugly and confusing on-screen; for the sake of intelligibility, a way to hide them needs to be found.

Don't mistake me, I'm not knocking the stored commands – they are arguably *Protext*'s greatest assets – but if people are not using them because they don't understand how, there seems little point in having them.

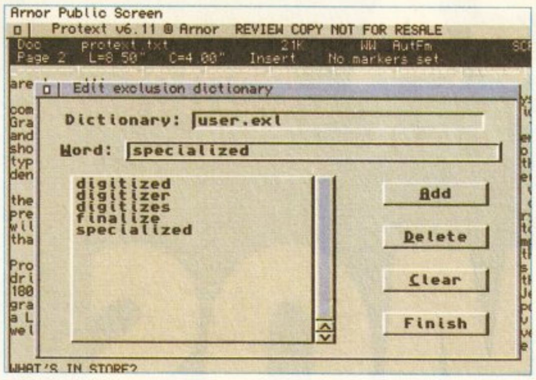
Another of *Protext*'s assets that many miss out on is the macro system. Macros are a way of executing with a single keypress an operation that normally requires many keypresses. Macros can be recorded. You start the record feature and assign it to (say) a function key, then every key you press or function you select is remembered until you stop the recording. Pressing the selected function key will then "play back" the macro recording. As a simple example, you could create a macro that inserts your name and address into a document with a single keypress. At an even simpler level, you could assign keyboard short-cuts to single menu items that don't already have them.

Old *Protext* hacks will know that this is nothing new but Arnor has expanded this macro system into a glossary feature for version 6. The macro and glossary systems work in exactly the same way in that both can be recorded. But there is one subtle difference. While a macro is tied to a keypress (**Shift-F1, Ctrl-Alt-E** or whatever), a glossary item has a name, supplied by you, and is executed by typing that name into the document (at any point) and then immediately pressing **Ctrl-Shift-G**, at which stroke the word you just typed gets expanded to whatever has been previously recorded for it in the glossary. Here's a useless example: you could record a glossary item called "s" that records the File/Save menu-pick and then, to save the current document, you could type letter "s" into it and immediately press **Ctrl-Shift-G**. The letter "s" will then disappear and the document will save with the current filename. A more practical example would be to create glossary items that expand to typesetting and style codes for your desktop publishing program.



While this macro may appear complicated, it was "programmed" by making* Protext *record a sequence of keypresses. Here, Alt-B has been set to delete all files in the current directory with a ".bak" suffix.

Here's a handy tip: if you use the macro recording facility to assign the **Ctrl-Shift-G** keypress to (say) the F1



The exclusion dictionary is very useful for excluding all but one spelling of a word that has multiple spellings, thus helping you to spell consistently throughout all your documents.

key, you don't have to use two hands to expand a glossary item.

Both functions have editors that enable you to alter, delete, load and save separate macro and glossary files, so you can set up any number of these for specialised use. Two special files called "protext.key" and "protext.gls" contain the settings that will be loaded at the same time as *Protext* itself. Macros and glossary items can be up to 255 characters long but, because the last function of a macro or glossary could be to call up another macro or glossary item, you can create some very long and convoluted macros and glossaries indeed. A word of caution here: it is possible, while linking macros or glossaries, to cause a macro or glossary to call itself, which would make the same thing happen over and over again. Currently there is no way to stop a macro or glossary during its execution and the only way out is to reset the computer.

IT'S ONLY WORDS

Protext 6 comes with the same 110,000-word British English dictionary and 47,000-word thesaurus as previous versions but the spelling checker and thesaurus requesters have been tidied up to conform to the Workbench 2/3 look and feel. The old batch spelling mode, accessed from the command line, is still there for those of us who prefer to get the job done quickly rather than wave the mouse around.

A new addition is the exclusion dictionary. This enables you to specify words as "bad", even if they are present in the main dictionary, which for copyright reasons cannot be edited. For example you may like to spell all your words that end in "ize" as "ise". If you enter them into the exclusion dictionary, "ize" words will be flagged as badly spelt. Alas, nobody thought to build wildcards or an "exclude endings" into the feature, so you'll have to type the lot in one by one.

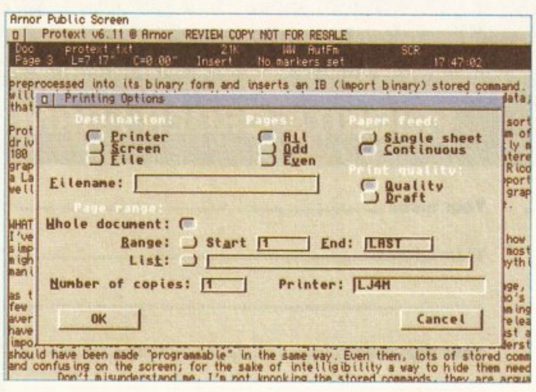
Praise be! The user dictionary also now has an editor, at last making it a quick and simple job to remove words that have been added accidentally, or by colleagues who can't spell.

Index and Table of Contents (ToC) generation is, as before, a powerful and flexible system which provides for phrases in the index as well as just words. Marking words for inclusion in an index or ToC is a laborious and time consuming job. The *Protext* manual suggests that index markers are best inserted when the text is being typed but many writers will find this a distraction and will want to leave it until the work is completed. Still, a fair amount can be achieved with Find and Replace.

WHAT'S IT GOOD FOR?

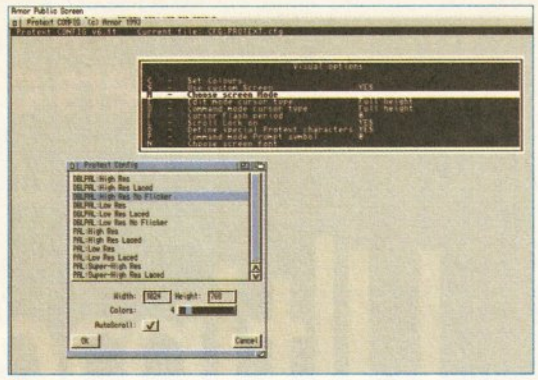
With a program of this size it is inevitable that there will be much that is left untold in any review of it. Rather than finish this piece with a hurried list of unexplained features which would mean little or nothing, I thought you would be better served by a discussion of what type of document *Protext* is good at processing.

For those whose main use for a word processor is to bash out words or to edit someone else's, *Protext* is simply adorable. It is fast and flexible, with more features than you can shake a publisher at. And its rulers and paragraph indent system make it quite easy to prepare scripts in columns.



The Print requester is easy to navigate, although the "print to screen" option is not the WYSIWYG preview it needs to be. This is something that Arnor is still working on.

Next to *AmigaTeX*, *Protext 6* is the quickest and best way to produce a straightforward, professional quality reference manual, book (or similar) on the Amiga, providing you don't want colour and are hooked up to a decent printer, like the LaserJet 4, that has a fair number of scalable fonts. Diagrams, screen grabs and the like can be imported, the main restriction being that no text can be placed to the right or left of a graphic, only above or below it.



They said it would never happen.* Protext *with a proper screen modes requester! And for those of you with graphics boards and quality monitors,* Protext *has no problem with large screen sizes.

Tables are a problem. After creation, a table (lines, text, figures and all) generally needs to be treated as a single entity which can be "picked up" and positioned anywhere you like, pretty much as you would a picture in a graphics based word processor. Sadly, *Protext* can't do this. However, its centred tabs, decimal tabs and right-justify tabs make it easy enough to set text and figures in a tabular format and the line drawing mode (provided your printer supports it) means that you can even draw lines where needed.

Other than the aforementioned scripts, I can't honestly recommend *Protext* for producing anything in columnar format. While there is a print-in-columns feature and a "box" mode that enables you to cut and paste narrow columns of text alongside each other, neither feature works well with imported graphics and they are unlikely to give you the look you're probably after. It's fine for A5 sized newsletters – these are essentially manual/book style publications – but for A4 magazine-style newsletters, you really need a graphics based word processor or a desktop publisher.

For straightforward business use – letters, invoices, mail merge, labels, reports, price lists, stock lists and so on – *Protext* is perfectly adequate and at times superb.

If you're producing academic work and need to print footnotes (that is notes printed at the foot of each page as opposed to collected together and printed at the end of a document), *Protext* is just the job. Printing with maths symbols or with foreign alphabets is going to depend on what fonts are available (either built into your printer or as plug-in cards) but there's nothing to stop you redefining the default *Protext* font or creating and downloading printer fonts from within *Protext* itself. This is not a job for the novice but it can be done.

Protext is good for all these things, and many more I'm sure. But you only have to look at the success of the rival programs – *Wordworth*, *Final Copy* and now *Final Writer* – to see that the Amiga market has almost completely moved to graphics-based word processors.

SHOPPING LIST

Protext 6 £99

From: Arnor Ltd, 611 Lincoln Road, Peterborough, PE1 3HA.

Phone: 0733 68909

CHECKOUT PROTEXT 6.11

Features
●●●●●●●●○○
More traditional word processing features than any other Amiga word processor but if you want WYSIWYG and pretty toolbars forget it.

Documentation
●●●●●●●●○○
Better presented and less daunting than with previous versions of *Protext*, the manuals are fine examples of what the program is capable of producing.

Ease of Use
●●●●●●●●○○
There's a fairly steep learning curve if you are new to word processing or computing, although the new settings panels do make *Protext* easier to learn than before.

Speed
●●●●●●●●●●
Do you want to see it again?

Value for Money
●●●●●●●●○○
Fair price for an excellent text-based word processor.

Overall rating
●●●●●●●●○○
Without going down the WYSIWYG and toolbar road, this is very nearly as good as it's going to get.

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Ultimate AMOS

The ultimate games creator just got the ultimate guide

If you've got AMOS, then get this book! It explains what AMOS can do, and how to make it do it.

There are sections on program planning, producing 'readable' code, and screen handling.

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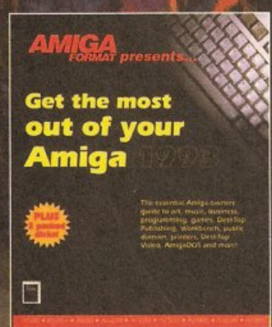
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AMITEK - 'FRIENDLY TECHNOLOGY'

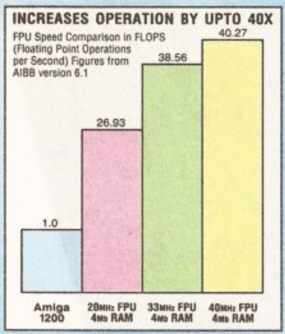
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HAWK RAM UPGRADE & MATHS ACCELERATOR

FOR THE AMIGA 1200

Maximise the processing power of your standard A1200. Be ready for the new generation of software which makes more demands on Amiga memory and technology. The AmiTek Hawk RAM expansion includes up to 8Mb fast 32-bit RAM, the ability to support a sophisticated 68882 FPU (Floating Point Unit - drastically increases the speed of maths intensive operations) and a battery backed up clock. Built to a high standard, this board can be easily installed and comes with a 2 year warranty. The Hawk RAM board is available in 9 pre-configured versions enabling you to select the model which best suits your requirements.

INCREASES OPERATION BY UPTO 40X



1Mb, 2Mb & 8Mb RAM versions available with or without Floating Point Unit

2 YEAR WARRANTY



BUILT-IN BATTERY BACKED CLOCK

- Plugs straight into A1200 trapdoor - No soldering required
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- Three types of optional Floating Point Unit - 20MHz, 33MHz or 40MHz PLCC 68882 co-processor
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- Works with all A1200 and A1200HD computers
- Does not invalidate your A1200 warranty
- 2 year warranty

	NO FPU	20 MHz FPU	33 MHz FPU	40 MHz FPU
1 Mb RAM	£99 INC VAT - RAM 1210	£149 INC VAT - RAM 1212	-	-
2 Mb RAM	£129 INC VAT - RAM 1220	-	£199 INC VAT - RAM 1223	-
4 Mb RAM	£199 INC VAT - RAM 1240	£249 INC VAT - RAM 1242	-	£299 INC VAT - RAM 1244
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PRICES FROM ONLY
1Mb RAM, NO FPU
£99
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1Mb SONY® EXTERNAL 3½" FLOPPY DRIVE

FOR ALL AMIGA COMPUTERS

SONY MECHANISM



2 YEAR WARRANTY

DELUXE DRIVE
The AmiTek drive has been specially designed to meet the needs of Amiga users and has many deluxe features which are not included in other drives - check out the competition!

ANTI-CLICK
The anti-click feature stops your drive from making lengthy whirs and clicks that occur when the drive is empty and searching for a disk.

ANTI-VIRUS
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SONY MECHANISM
Before creating these drives, AmiTek took the time to source a mechanism that has all the features, quality and reliability that Amiga owners have been crying out for. After vigorously testing Sony's mechanism, it proved to be the best by far available.

- High Quality 3½" Sony Mechanism
- Enable/Disable Switch
- Built-In Anti-Click Feature
- Switchable Anti-Virus Mode
- 75ms Access time
- Daisy Chainable Via Thru Port
- Low Power Usage
- No Need For External PSU
- Compatible With All Amigas
- 2 Year Warranty

Details taken from models available DEC '93	ANTI-CLICK	ANTI-VIRUS	STRONG METAL CASE	QUALITY SONY MECHANISM	ISOLATION SWITCH	2 YEAR WARRANTY
AMITEK	✓	✓	✓	✓	✓	✓
ZAPPO	-	-	✓	-	✓	-
CUMANA	-	-	-	-	✓	-

EXTERNAL DRIVE
£59
INC VAT - DRI 1159

1Mb INTERNAL FLOPPY DRIVE

FOR AMIGA 500/500PLUS



The internal AmiTek replacement drive is ideal for users who wish to replace their existing internal drive. The pack features a high quality internal 1Mb, 3½" drive mechanism for the Amiga 500/500PLUS. All you need to fit the drive is included, plus easy to follow fitting instructions and 24 months replacement guarantee.

2 YEAR WARRANTY

INTERNAL DRIVE
£44.95
INC VAT - DRI 3600

PCMCIA CARDS

FOR AMIGA 600

2 YEAR WARRANTY



For sheer ease of use and flexibility you can't beat AmiTek's PCMCIA RAM upgrades. These compact credit card sized upgrades slot into the PCMCIA port on your A600 or A1200, increasing the RAM by 2Mb or 4Mb.

2Mb CARD
£119
INC VAT - RAM 6020

4Mb CARD
£179
INC VAT - RAM 6040

MODULATOR

FOR ALL AMIGAS

NEW!



2 YEAR WARRANTY

The AmiTek External Modulator makes an ideal replacement modulator for all Amiga owners. Everything needed is supplied. Like all AmiTek peripherals, it comes with an easy to follow manual.

- User friendly manual included
- High quality design
- FREE RF cable supplied

MODULATOR
£34
INC VAT - MOA 4200

RAM UPGRADES

FOR AMIGA 500/600

Many business packages and advanced games require more than your Amiga's standard memory capacity to run at their full potential. The AmiTek range of RAM upgrades is the perfect way to add that extra memory capacity to your system. The following RAM upgrades are all trapdoor cards and fitting will not affect your Amiga's warranty.

2 YEAR WARRANTY

A500 - Low cost 512K upgrades, with or without a battery backed clock.
512K - NO CLOCK £18 INC VAT - RAM 0505
512K - WITH CLOCK £23 INC VAT - RAM 0510

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1Mb UPGRADE £30 INC VAT - RAM 0520

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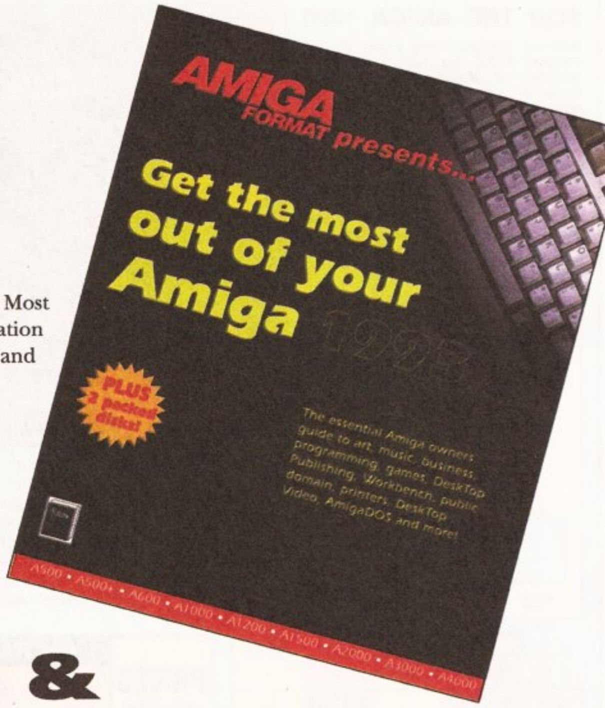
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...two top titles to help you get the most out of your machine



GET THE MOST OUT OF YOUR AMIGA 1993

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The smartest thing we did was to hire 10 independent Amiga experts to write a complete guide to every Amiga application, from desktop video to programming, from games to music, explaining the jargon, the techniques and the best software and hardware to buy. Thinking of getting a printer? A hard disk? More RAM, an extra floppy disk drive or an accelerator? We give you tips on what to look for and what to buy. And throw in a complete AmigaDOS 2 & 3 command reference plus two disks of top Amiga utilities!

The dumbest thing we did was call it 'Get the Most out of your Amiga *1993*', because the information it contains is as useful now as ever. Do you and your Amiga a favour – get this book!

DIMENSIONS: 185mm (W) x 223mm (H)
PAGES: 336
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PRICE: £19.95
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POCKET WORKBENCH & AMIGADOS REFERENCE

How do you use Workbench to copy files? How do you format floppy disks? How do you move things from one folder to another? If you've just got your Amiga, Workbench can be confusing – unless you've got expert help on hand.

This reference book has been made small enough to slip into a pocket, yet big enough to incorporate everything you need to know about Workbench and AmigaDOS. It's also been wire-bound so that you don't have to hold it open while you work – not everyone wants to type one-handed.

As well as help for beginners, there are sections on Workbench menus, preferences and the supplied Tools and Utilities.

While for advanced users, there's a full AmigaDOS 2 & 3 command references, listing all commands in alphabetical order and quoting their function, syntax and some example uses.

We wanted to design the single most useful reference guide possible for serious Amiga owners. We think we've done it.

* Contains some material also published in 'Get the Most out of your Amiga 1993.'

DIMENSIONS: 100mm (W) x 190mm (H)
PAGES: 168
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Talking *Shop*

Have your say, and perhaps win £25 into the bargain! Send your missives to: "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW.

"ONE MAJOR FLAW"

I am writing to demand a drastic re-think of your comparison between AMOS and *Blitz Basic* in issue 33. The tests you performed were satisfactory apart from one major flaw: you said yourself in that same review that *Blitz* is a *compiled only* language, meaning that programs must be compiled before being run, which obviously dramatically increases the speed at which they are run. The problem is that *AMOS* code is *not* compiled before it is run, unless you compile it beforehand with the separate compiler. As it is, by not compiling AMOS you gave *Blitz* a head start before the race had even begun.

Also, can you give me the address of the PD library that you got *PowerData* from, because you forgot to include it, and automatic file compression sounds good?

CJ Heelas
Lowestoft
Suffolk

No drastic rethink needed – the AMOS program *was* compiled before being compared with its *Blitz* counterpart (though perhaps we should have said so). The truth of the matter is that *Blitz* is a damned sight quicker than AMOS.

We got *PowerData* on disk FF841 from PD Soft ☎ 0702 466 933. Their address is: 1 Bryant Avenue, Southend-On-Sea, Essex, SS1 2YD.

"RAY-TRACED COVERS"

After opening my copy of *Amiga Shopper* I usually look at the competition results, just to see who the winner is, and maybe (just maybe!) to see if I've won anything.

I have always longed for a scanner (I write a small publication with no pictures), so you can imagine how surprised I was to see I had won the top-of-the-range scanner in your February issue. I cannot mention how grateful I am both to you and Epson. Out of interest, what chance did I stand of winning the competition?

One of the main reasons I used to look forward to the next *Amiga Shopper* was the cover. Two issues in particular spring to mind: December '92 and June '93. Both were ray-traced, and were absolutely stunning. Is there anyway you can return to the ray-traced covers? They really made *Amiga Shopper* stand out at the newsagent's shelf.

Last question: if *PageStream 3 is* better than *Quark XPress*, will you switch to the Amiga 4000/040 to create your magazine?

Nathan White
Walsall
West Midlands

Well, we're glad you like your prize. As to your chances of winning, they were particularly small for that competition, as we had such an overwhelming response. I don't know exactly how many entries we received, but it must have been several thousand.

Thanks for your comments about our covers. I must say that deciding on cover images has been one of the most enjoyable parts of mine and the art editor's jobs, and one in which we've taken particular pride. So you'll forgive me, I hope, if I get all defensive and say that I think the covers have actually improved since the issues you refer to (though they were pretty damned good, too). We'll use ray-tracing again, if and when the subject demands it, but in general we find that painted illustrations allow us more freedom.

In answer to your last question: no, we will not use Amigas to create the magazine. All of Future's magazines are created on Macs, linked together in a huge network, so that transmitting information between machines and to our production facilities is simplicity itself.



The cover image from our June 1993 issue, produced by Henri Bujko of Alternative Image. Isn't it nice?

"A FEW PROBLEMS"

I had a few problems with the recent review of Picasso II in *Amiga Shopper*, which had some worrying inaccuracies.

First of all, the Picasso does *not* require an expensive multisync monitor. It is preferred, but the board can be customised to drive cheap VGA monitors, expensive multisyncs and even the good old 1084S (at 15KHz). This was a serious oversight on your part.

Secondly, the reviewer mocked the fact that the manual warns about the possible danger of sending a damaging signal to a monitor. This is a sensible and necessary precaution. The board is customised to reflect the optimum frequency. You must warn the user.

Overall, the review was positive, but I would be grateful if you could address these points.

Paul Lesurf
Blittersoft
Milton Keynes

"BE LEFT BEHIND"

I think *Amiga Shopper* is losing touch with many of its readers; it seems I am constantly being told to upgrade or be left behind. Personally, I do not wish to upgrade to 32-bit technology as my A600 fulfills my requirements.

As interest grows in advancing Amiga technology, *Amiga Shopper* devotes more space to the subject. This, by definition, means you are increasingly ignoring the needs of people with "old" Amigas. May I remind all those with Amiga 1200s that you too will be in my situation in under 12 months.

I have a suggestion which, if implemented, would bring about significant change. I therefore ask you to put it to your readers: would you prefer *Amiga Shopper* split into two magazines – Amiga 16-bit and Amiga 32-bit?

M Ford
South Norwood
London

I'm surprised you think that. We do our best to ensure that the vast majority of our articles cater for *all* Amiga owners. What do the rest of you think?

AS

MIGHT HAVE BEEN

£25 WINNER

I was very interested to read, in the latest issue, Mark Smiddy's article *Why Not Word For Workbench?*. Sadly, it's a case of what might have been.

The Amiga does have the reputation of being, primarily, a games machine and unless, or until, the big boys like Microsoft bring in Amiga versions of their top notch programs then that image will be retained. Softwood, with *Final Writer*, have gone a long way to redress the balance, but there is still a long way to go. I know of several people who have deserted the Amiga for the PC because of the quality software.

One of the PC programs that I very much wish would appear for the Amiga is *Autoroute*. True, we do have *GB Route*, which is pretty good, but it does not really compare with *Autoroute*. Some considerable time ago I contacted the distributors of *Autoroute* to see if an Amiga version would be forthcoming, but was told that this would not be the case because of the high incidence of piracy amongst the Amiga fraternity. Whilst that may have been true at the time, it certainly is not now – piracy is as rife in the PC world as it is in the Amiga world. With rocketing sales of the A1200 I would have thought an Amiga version would be well worthwhile for the distributors.

DW Joslin
Bridgwater
Somerset

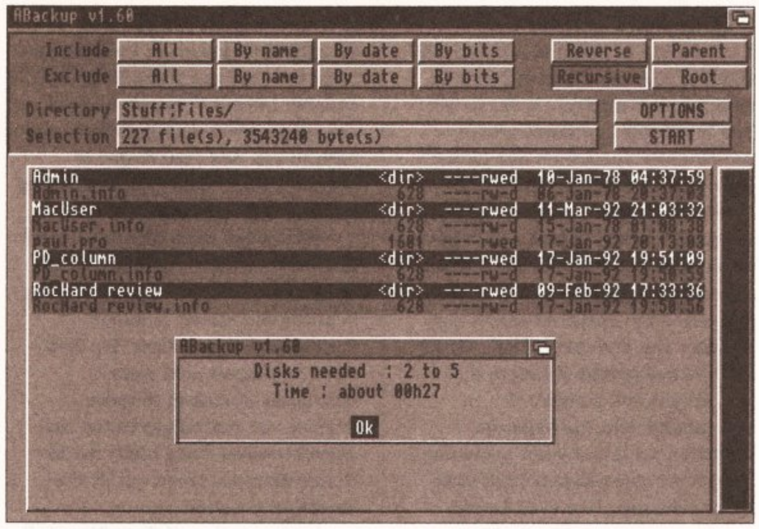
SOFTWARE for free

Ian Wrigley bids goodbye to the world of Amiga PD, shareware and licenseware with a round-up of his favourite programs of the last 24 issues.

And it's goodbye from me... Yep, this is my 25th PD column and, sadly, my last. So I thought that I'd take a look back over the last couple of years, and list my top selections of PD. I started back in issue 11, and since then I've looked at hundreds of utilities, business packages, fonts and clip art collections. Some have been superb while others have been truly dreadful.

The next few pages feature the pick of the crop as well as a few of the total turkeys that have helped to liven things up along the way. At the very least, getting hold of the programs on the following five pages should give you an 'instant library' of some of the best PD and shareware available for the Amiga. Most of the programs are available from major PD libraries; those that are only available from one or two, or directly from the author, have contact details listed, and licenseware programs have their Central Licenseware Register number where I could find it.

Don't stop sending in shareware and PD programs for *Amiga Shopper* to review — a new reviewer is already in place and chomping at the bit to check out your masterpieces. Just send them to *Amiga Shopper* at the usual address, sit back and wait for fame to come your way...



ABackup: periodically backing up your hard disk is absolutely essential, and this is one of the better ways to do it.

THE A64 PACKAGE

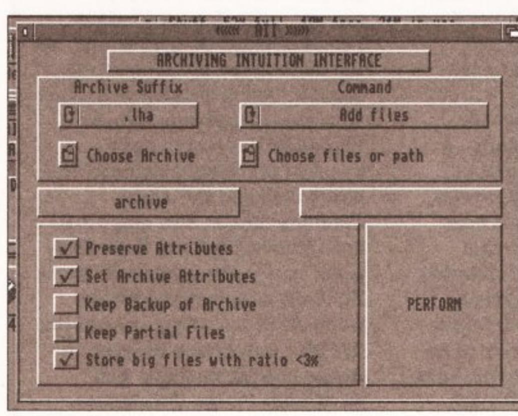
Nostalgia fans will love this program, which is a superb emulator of the Commodore C64 computer. Because it's illegal to copy the computer's ROM, the author – Cliff Dugan – has written his own ROM emulator, but registered users of the program receive a program which will allow you to download the C64's ROM to floppy, so that you can be guaranteed 100% compatibility. Registered users also receive a hardware interface which allows you to use your C64's disk drive and printer with the Amiga (useful, given that you've just dumped the contents of the ROM to a 5.25-inch floppy...).

ABACKUP

Backing up your hard disk is an important procedure yet it's something that most people just don't bother doing. At least, they don't bother until it all goes horribly wrong and all their data is lost.

The problem with making backups is that it's just so painfully boring. You sit there, swapping disks, conscious of the fact that you must have forgotten at least one vital file as your mind wanders. *ABackup* might be the answer to your prayers. It's a powerful backup utility, which takes the hassle out of the job and goes about its business efficiently and effectively. There are some neat features which make life easy for the user; for example, if you have two floppy drives you can get the program to use them in turn, writing the first bit of data to **df0:**, the second to **df1:**, the third to **df0:** and so on. That way, you can just swap disks without having an annoying requester on the screen every few seconds. Selecting the files to be backed up can be done in a range of ways, including by name, by date, and by the setting of their flags. The program will compress the data as it's working if you want — useful if you want to economise on the number of floppies used and you're not worried about the backup taking longer.

All in all, *ABackup* is an easy-to-use, efficient backup utility. Now you've no excuse for losing data when your hard drive takes a nose dive.



Archiving Intuition Interface is a brilliant utility for putting a user-friendly face on those otherwise oh-so-complicated archivers such as LhA.

BEGINNERS START HERE

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software or "freeware" is only one branch of this area; the other main one is shareware.

Essentially, freeware may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author – it's normally around £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs – and if they don't, the Amiga scene will be a poorer place. Don't think that you're paying money for nothing, either – often hundreds or even thousands of hours of work have gone into creating a program, and it's only right that the programmer receives some reward for his or her hard work.

The third branch of software that we cover here is called licenseware. This is a form of shareware which is licensed to one (or more) PD libraries. In essence, when you buy a licenseware program you are buying shareware and paying the license fee at the same time. For this reason, you should treat any licenseware that you buy exactly as you would treat a piece of full-price commercial software – don't pass it around to your friends. You've only bought the right to use it yourself.

Can I pass other people copies?

Yes – that's the way that PD reaches a wider audience. Just make sure that you have followed the author's requirements for distribution. These are normally things like not charging more than a certain amount for the disk, not altering the program, or making sure that all the original documentation is included on the disk.

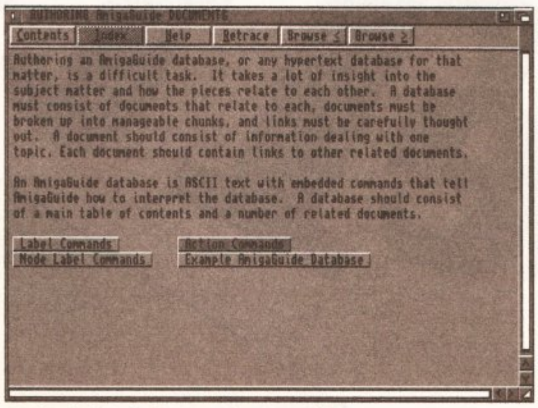
You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

You should not, of course, pass on licenseware – it should be treated in the same way as registered shareware.

All

All stands for *Archiving Intuition Interface*, and puts a friendly front-end on notoriously awkward file compression utilities like *LhA* and *LZH*. Rather than having to open a Shell and type in complex command line arguments to get your files compressed, *All* lets you select the files via a standard Intuition requester, choose what to do with the archive by clicking on a gadget, and perform the whole operation just by clicking on a button.

Utilities like *LhA* are immensely useful, and *All* makes them accessible to even the rawest beginner. Highly recommended.



AmigaGuide is Commodore's official Hypertext viewer. Not only can you look through text files, but also get extra info on important keywords. And it's free!

AMIGA E

E is a powerful programming language based on things like *C* and *Modula 2* (see our full review on page 63). This Amiga version, written by Wouter van Ortmerssen (who also wrote *False*), includes support for Intuition calls, so you don't need to buy any extra libraries to start creating 'real' Amiga programs, with full window, gadget, slider and requester support.

AMIGAGUIDE

AmigaGuide is a hypertext-style document viewing package created by Commodore. It supports 'hot links', so clicking on a highlighted word or phrase will automatically take you to the relevant section of the document. More and more authors are releasing their documentation in *AmigaGuide* format, and Commodore finally decided to make the viewer available for free on Fish disk 870. If you're planning to check out a lot of PD and shareware, this is an essential program to own.

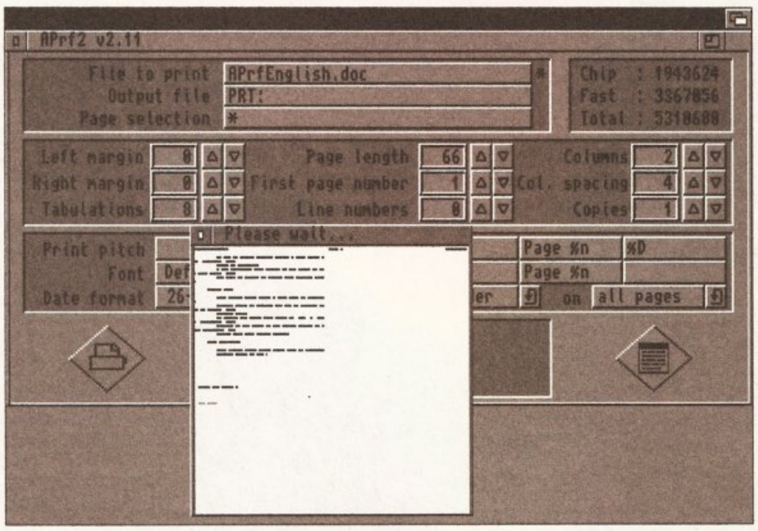
AMIGA HOLICS DISK MAGAZINES

Amigaholics is one of the most established Amiga disk magazine publishers around, and the contents just get better and better as the months go on. The whole thing is packaged up with a professional looking front-end which means that you can read articles without ferreting around through several folders. The reviews and articles are always intelligent, well-researched and thought-provoking.

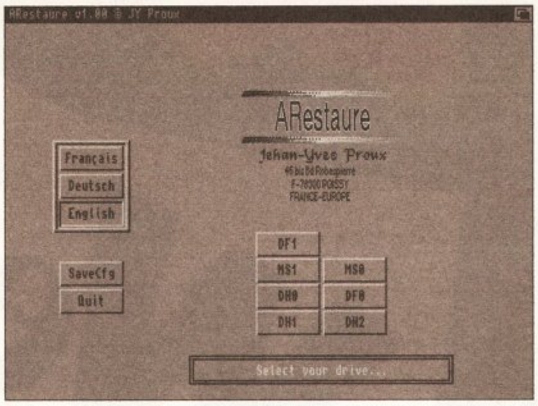
Amigaholics is the model of a consistent, high-quality disk magazine; if you haven't seen an issue yet, you should write for details immediately, to: Kevin Bryan, 49 Coutts House, Charlton Church Lane, Charlton, London SE7 7AS.

APRF2

If you don't have an all-singing, all-dancing word processor then the chances are that your printed output doesn't look particularly spiffy. Well, *Aprf2* will solve that little problem for you. It's described as "a tool for managing your print output" and supports parameters like left and right margin settings, multiple columns, headers and footers, multiple copies and even a preview window which shows you what your document will look like before you commit it to paper. If you need elegant-looking output, this will do the job.



Aprf2 does just about anything you could ask to your printed output. A handy preview window ensures you're aksing it to do what you think you are.

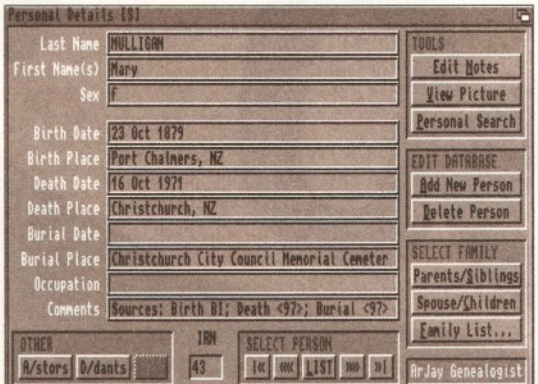


We've all done it – deleted files by mistake. Now, with ARestaure, you've got a fairly good chance of resurrecting them.

ARESTAURE

If you've ever thrown away a file and immediately realised that you trashed the wrong one, *ARestaure* could save your bacon. It's an 'undelete' routine which works with both OFS (Old Filing System) and FFS (Fast Filing System) disks, and should let you recover files that have been deleted both from the Workbench and from the Shell.

Of course, it's not perfect — no such utility is — but if your hard disk isn't full to bursting, and the file was deleted before you saved much other data, you've got a fair chance of recovering it.



ArJay: keep tabs on up to 999 people's mating habits, regardless of their sexual preferences or religious leanings.

ARJAY

Any genealogists out there will love *ArJay*. According to its author, it's "totally non-sexist and secular" so even the most politically correct will find it acceptable. It has a nice user interface, data entry is simple, there's *AmigaGuide*-style on-line help and there's support for direct linking with an image viewer if you have digitised pictures of people on your Amiga. Its only real limitation is that it will only support 999 people per file but that aside, it's an excellent application and well worth looking at.

BLUE ROSE FONTS 3

If you need high-quality 'display' fonts for titling a video, a demo or just a piece of artwork, then look no further than this excellent collection by Eddie Barry. There are loads of different fonts on the disk, which are displayed as a slideshow if you let the disk auto-boot. When displayed like this, they appear with graphical backgrounds but it's perfectly easy to extract just the fonts since the *Deluxe Paint* 'stencil' is included in the file so that the background can easily be removed. *Blue Rose Fonts 3* is available from the author – Eddie Barry – for the princely sum of £2.

His address is 33 Glenmore Walk, Hilden, Lisburn, N. Ireland BT27 4RY.

continued on page 91

RATING THE PROGRAMS

Just to be awkward, I rate the software that I review in two different ways, depending on what it is. Disk magazines, collections of clip art and the like are given a "value for money" rating, since you're essentially paying for one thing, or group of things, on the disk.

Single programs which appear in a collection of others, or programs which I've downloaded from bulletin boards, are given a "program rating", which reflects how good I think they are, taking into account usability, bug-proofness, my own particular tastes and so on. Both ratings are out of a possible 10 – a maximum only achieved by the very best.

We're So Pretty

Mandelbrots, fractals, chaos mathematics. Call 'em what you will, there's no denying that Benoit's sums result in some pretty spectacular, and spectacularly pretty images. This month, Amiga Format delivers you the power to create these pictures on your own Amiga.

Stuck to the front of the fact-packed February issue (on sale January 27) is a complete copy of Daniel Wolf PhD's *FractalPro 4.0*. Get it!


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- Pro Tracker 3.1b
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- Samples (3)
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- D-Paint Tutor
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- Easy Calc+ (WB2/3)
- PC Task 2
- Compugraphic Fonts (7)

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- Fit Chix 2 (2) (AGA)
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GAMES
- Klawz The Cat
- Glaxo (2)
- Star Base 13 (2)
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DEMOS
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- Speccy Emulator +136 games (9)
- 5 Kick (not 500)
- Tools for Fools
- Desktop Video (4)
- Business Pack
- Font Workshop
- Printmaster (2)
- Paint & Animate
- Text Engine V4
- Business Clipart
- Colour Clipart (3)
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GET IN CONTACT!

If you've written – or discovered – any PD, shareware or licenseware that you think should be reviewed in these pages, or if you've got any other comments or suggestions, write to Ian Wrigley c/o *Amiga Shopper*, 30 Monmouth Street, Bath BA1 2BW. Alternatively, you can contact Ian on cix as 'iwrigley', or on the internet as 'ian@vampire.demon.co.uk'.

continued from page 87

CASS 1.1

I know, I know, this isn't the most Earth-shattering program ever, but it does its job and it does it well. *Cass* creates cassette labels and outputs them to any Amiga-compatible printer. I know that Home Taping Is Killing Music but don't we all record the odd copy of our albums so that we can listen to them on the Walkman on the way in to work? Anyway, *Cass* produces professional-looking labels for the case, so you don't have to suffer the embarrassment of hand-scribbled, illegible notes. I use it all the time.

DBB

DBB is short for *Digital Breadboard*, and is a digital logic circuit simulator written by Dan Griffin. It's an excellent program, and is a must for anyone involved in logic circuit design – students, physicists, Nobel prize candidates...

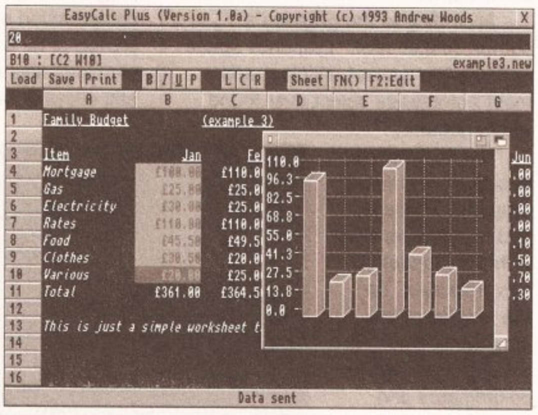
A tool palette of elements such as **NOT, OR, AND** and **NAND** gates floats on the screen; you place these elements on the main layout screen and then connect them together by clicking on the output of one and the input of another. Input devices can be switches or 'pulsers', which kick out a signal at specified time intervals, and there's even a four-channel oscilloscope simulator, which you can connect to various parts of your circuit to see that everything's working the way you thought it was.

Since *DBB* was released (on Fish disk 844) a couple of other, similar programs have appeared, but this is still the best by a long way.

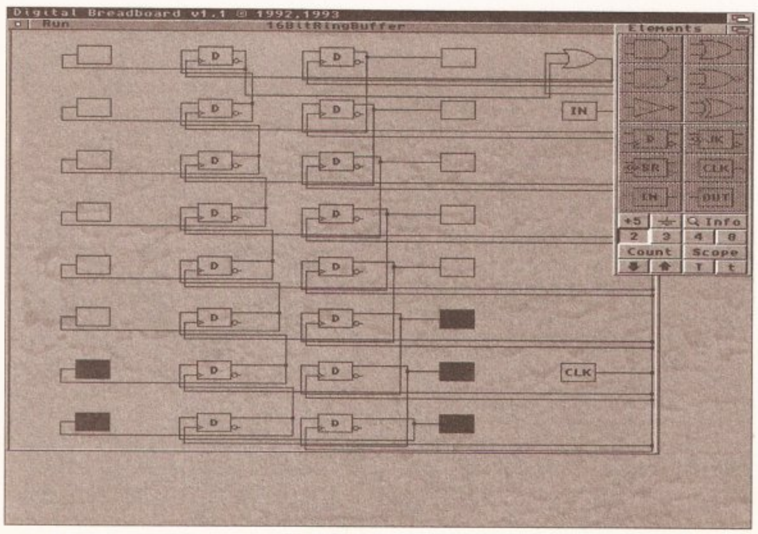
EASY-CALCPLUS

This is the best shareware spreadsheet available on the Amiga. Indeed, it probably rates as one of the best pieces of shareware around. It was written by Andrew Woods and includes almost all the standard *Lotus 1-2-3* functions (*1-2-3* and its clones are the de facto spreadsheet standard in the PC world) It has a function browser so that you don't have to remember the cryptic name — instead, you just select whichever function you require from a scrolling list. It also has an add-on feature, cutely called a *DreamLink* module, which enables you to create charts based on your data.

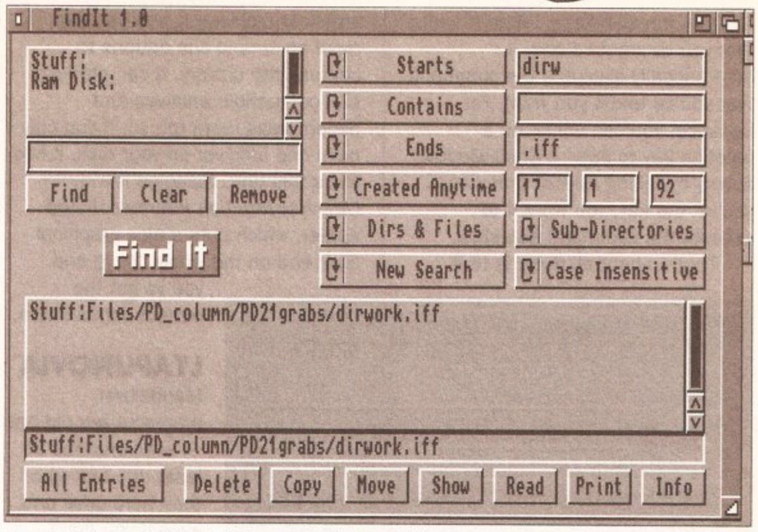
I've seen spreadsheets on most computer platforms (including DOS, Windows, Unix and Macintosh) and *EasyCalcPlus* is up there with the best of 'em. It's only £15 shareware and is worth far more. As I said in my original review, "for goodness' sake send in your shareware fee – we can't afford to have talent like Andrew's migrating to the commercial world!"



EasyCalcPlus is quite simply the best shareware Amiga spreadsheet available, and rivals commercial packages found on the PC and Mac.



Digital Breadboard is an excellent electronic simulation package, complete with a tool palette containing NOT, OR, AND and NAND gates.



Looking for a utility to help you look for a file on an overcrowded hard disk? Then look no further than FindIt.

FALSE

If you're a tech-head, you'll love *False*. According to its creator Wouter van Ortmerssen, it's a programming language designed to "look cryptic and fuzzy". Programs in this freaky language are almost totally unreadable, but it can do 'real' tasks – a number of example programs are included on the disk, along with good documentation. It'll never take over from *C* or *Pascal* but, if you like the challenge of learning new computer languages (I know someone who claims to be proficient in well over a dozen), check it out.

FINDIT

This is a 'find file' program written by Gary Smith. It gives a large range of options with which you can specify what files to display. For instance, if you created an IFF file but can't remember the name, just saying that it contains the extension **'.iff'** might produce a listing of hundreds of files. But *FindIt* will also let you specify which directories to search, the creation date of the file and gives specific fields for the start, middle and end of the name. The Amiga doesn't come with a **Find File** command as standard; *FindIt* more than competently plugs that hole in the operating system.

GRAPHPAPER

You know how it is. It's Sunday night, you're doing your maths homework and suddenly you discover that the teacher has told you to plot some graphs. But – tragedy – the shops aren't open, and plotting graphs while you're travelling on the school bus in the morning is guaranteed to get you an F. *GraphPaper* to the rescue! It can create just about any sort of graph paper that you can imagine (and some that you can't), and then output it to your printer.

At least, that's the only scenario I can think of that justifies the existence of this particular utility...

KCOMMODITY

Whatever you want to do, you're bound to be able to find a Commodity to do it. Whether it's blanking your screen, putting a clock on it, accelerating your mouse, bringing windows to the front of the screen by just clicking on them or whatever, someone somewhere has written a utililty to do just that. *KCommodity* is a sort of 'meta Commodity' that incorporates all of those features and a whole lot more. There are many advantages to this, not least of which is the fact that they all work perfectly together — something that can't always be said when you use several independent utilities. There are other 'Commodity collections' around, but this has got to be the ultimate. It's even controllable by ARexx.

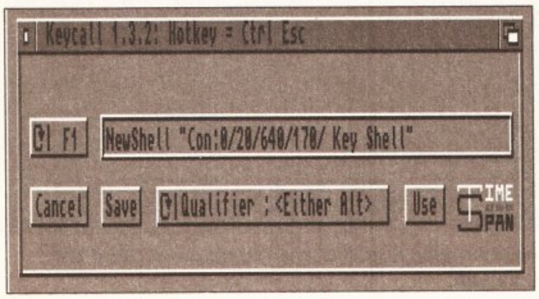
Do note that if you're going to get this from the Fred Fish collection, it comes on two disks; 885 contains the Commodity itself, with all the documentation, while 886 has the source files.

KEYCALL

This program sits quietly in the background, keeping an eye on your

Amiga's function keys. When it spots that you've pressed one, it automatically executes the command that you've told it you want. For instance, you can configure a function key to open a Shell window simply by telling *Keycall* that when you hit the key, you want it to execute the command **Newshell**.

That's about all there is to it, really. It's a perfect example of a neat, useful little utility that no-one should be without.



Configure KeyCall to automatically execute an AmigaDOS command whenever you hit a specific function key. It's easy and useful.

KINGFISHER

I wonder if Fred Fish realised what he was starting when he put out his first few disks of Amiga PD and shareware. Many, many hundreds later, he's still going strong and the problem for we poor end users is that it's getting harder and harder to track down what disk a particular program lives on.

Enter *KingFisher* by Udo Schuermann. This is an impressive, useful database whose sole purpose in life is to keep track of the Fish library. It supports search features such as finding more recent versions of a program as well as standard search by name and by text in the description. Since Fred keeps the contents in a standard format, it will add details of any new disks simply by scanning the Contents file on those disks.

The Fish disk collection is soon to be released on CD-ROM, but there are still a thousand disks available – and this program is an excellent way of keeping track of them all.

KURVE

There are plenty of graph-plotting programs around but *Kurve* is one of the best. It does its job rapidly and supports a wide range of mathematical functions. Once a curve is plotted, the program will provide you with details of parameters such as turning points and maxima and minima — just the sort of thing maths teachers ask you for, in fact.

LHA

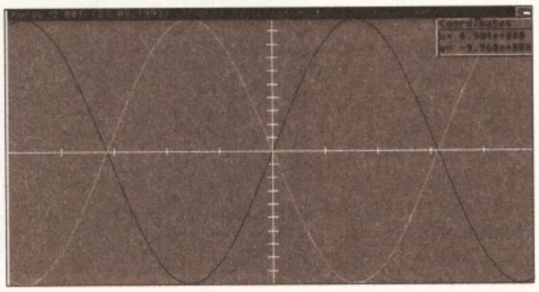
This is probably the ultimate file compression utility available for the Amiga. It's the fastest, produces the smallest archives... and has the most command line options to confuse the unwary. It can produce LZH-compatible archives and decompress them too so, if you only have one archiver on your disk, it has to be this one. Combine it with *AII* (*Archiver Intuition Interface*, listed earlier, which puts a nice graphical front-end on the whole thing) and you've got the perfect combination.

LYAPUNOVIA

Mandelbrot programs are old hat — everyone has at least one lurking on their hard drive and, even if you don't, you must be bored by now of the same old images. So check out *Lyapunovia*, a program which allows you to explore mathematical spaces named after the Russian mathematician of the same name.

According to the program's author, Jesper Juul, "Lyapunov space must be the juiciest, spiciest and most outrageous object ever found within numbers."

The documentation describes just what Lyapunov space is, and how it compares with the Mandelbrot and Julia sets. But the real joy of the program is simply in playing, altering the co-ordinates and seeing what you come up with. And it's true — the graphics produced really are superb, and far more interesting than those tired old Mandelbrot sets.



Kurve is one of the best graph-plotting applications around. As well as plotting your curves, it'll tell you their maxima and minima as well.

MUCHMORE

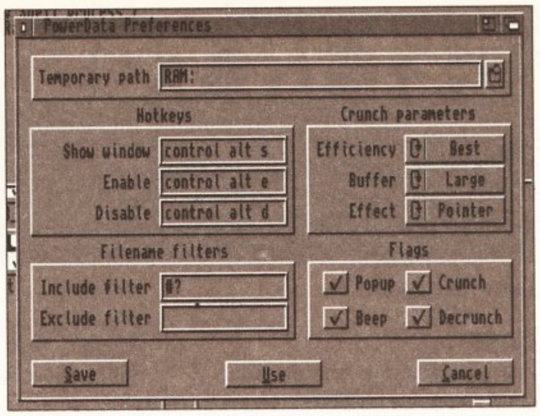
If you normally use the standard *More* browser for viewing text files, trash it and get hold of a copy of *MuchMore*. It's become the text viewer of choice for much of the Amiga world with its smoothly scrolling text (controllable via the mouse or keyboard), a Find feature, 'go to line number' command and much more. Much more. Ha ha. Ha.

OSCILLO-GRAPH

This is a fully-featured simulation of an oscilloscope, the electrical waveform generator much loved of school physics teachers. If you have an Amiga Sounder A-to-D converter, it will act exactly like a real 'scope but, if not, you can simulate inputs via a range of functions. If you are a science teacher — or just interested in physics – this is a 'must get'.

POST

This is a full *PostScript* interpreter which allows you to view *PostScript* images on screen or output them to a non-*PostScript* printer. It's ideal since much valuable documentation available on the Internet is saved in *PostScript* format which makes it useless to the majority of Amiga owners who don't have *PostScript* printers. *Post* supports Type 1 and Type 3 fonts and the full package has a fonts which emulate classics such as Times and Helvetica.



With PowerData installed you can get your programs to automatically compress their data as it's saved. They'll even de-compress it when they load it back in.

POWERDATA

This is an extremely useful utility, which transparently adds support for file compression to any Amiga program. It uses the *PowerPacker* compression system which has proved to be a popular way of shrinking files and programs while still allowing them to be launched by double-clicking. Once *PowerData* is installed, any file that you save from a program (a word processor document, *DPaint* graphic or whatever) will be automatically crunched for you. When you open it, it'll be decrunched before the program tries to read it.

If you're running out of hard disk space, or if you're still running from floppies, this is an invaluable utility which is highly recommended.

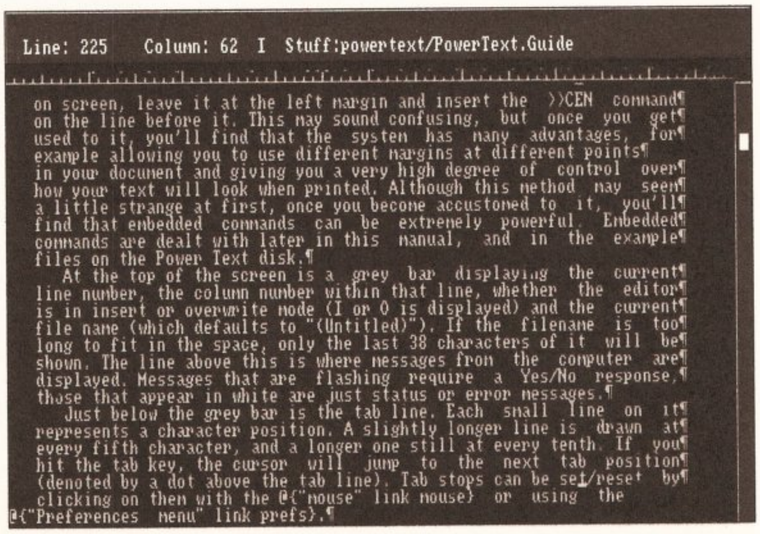
POWERTEXT II

Central Licenseware number CLU32

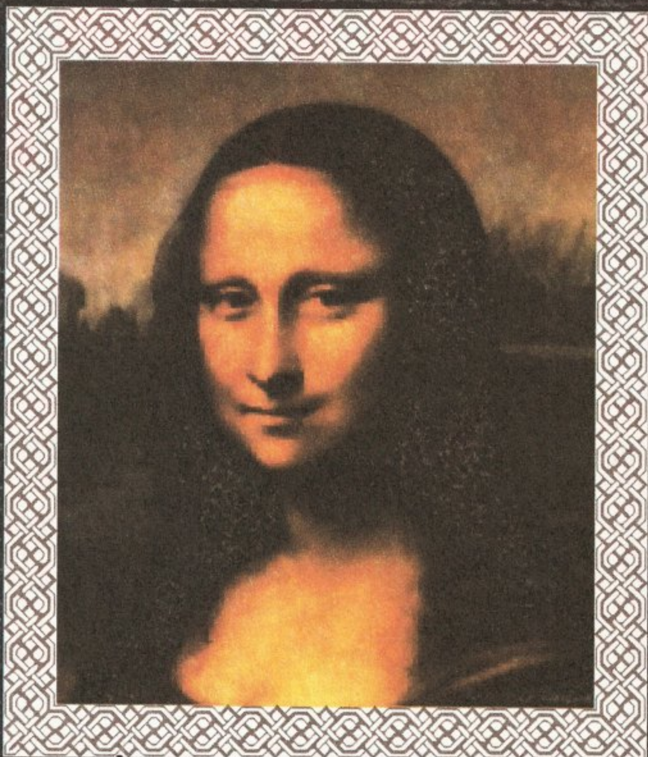
PowerText II is an exceptionally powerful word processor. It's written in AMOS, though you wouldn't know that it hadn't been hand-crafted in Assembly language if you hadn't been told. It's got just about all the features that you could ask for and rivals many commercial offerings. The program's author, Gary Stimson, has spent many months making sure that *PowerText II* is as complete as possible — it now includes a built-in spelling checker, mail merge, macros, auto-insert of date and time, automatic saving at user-definable times and a manual in *AmigaGuide* format for easy reference.

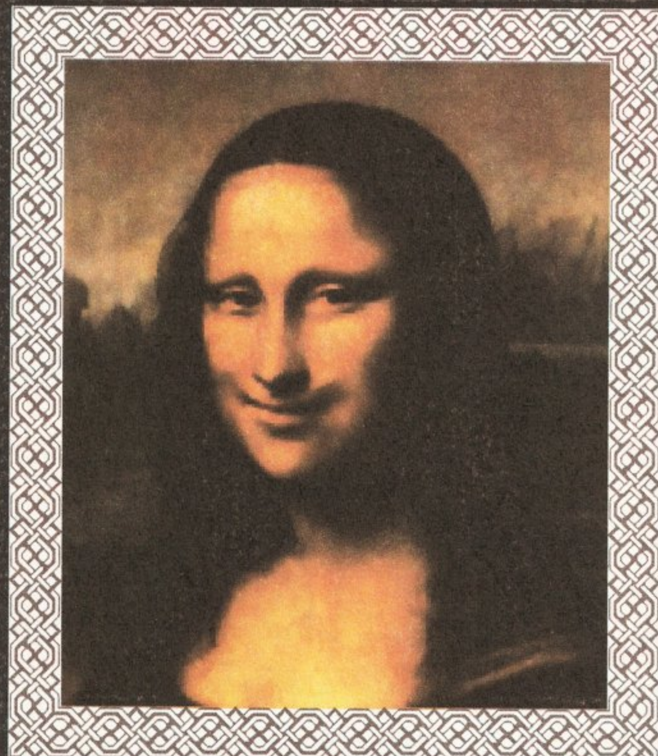
I wouldd be extremely surprised if *PowerText* doesn't do everything that you could possibly want, and then some.

continued on page 97



PowerText II is almost certainly the most powerful licenseware word processors available – it rivals many commercial programs!





A Mac classic

mac FORMAT

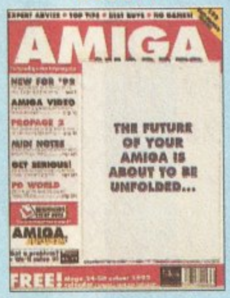
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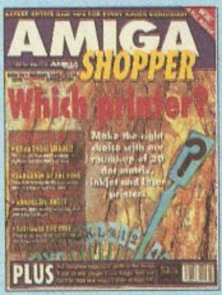
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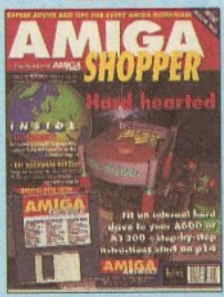
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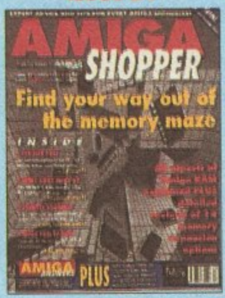
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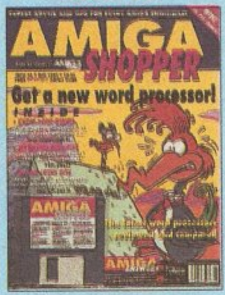
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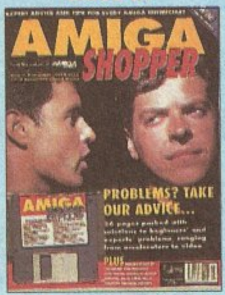
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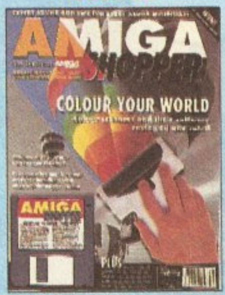
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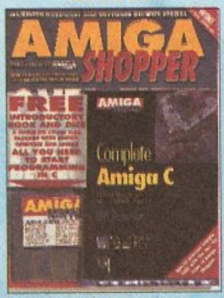
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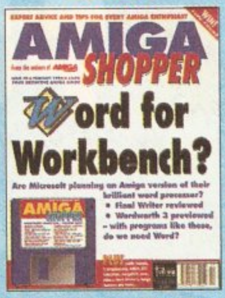
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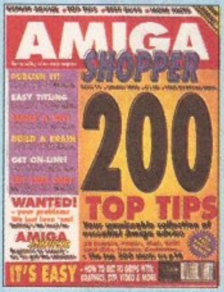
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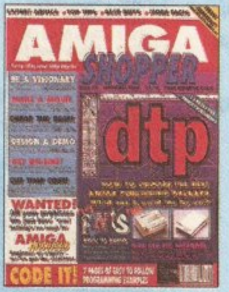
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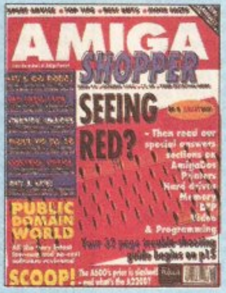
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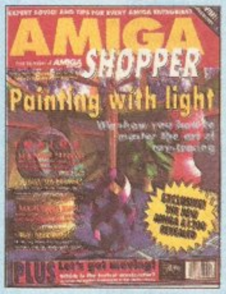
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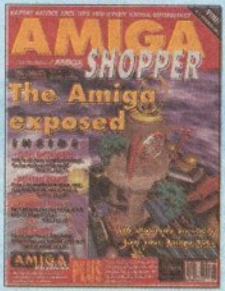
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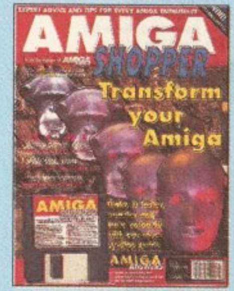
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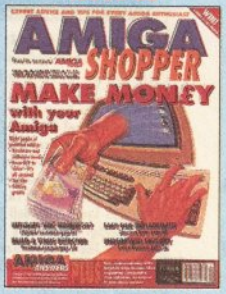
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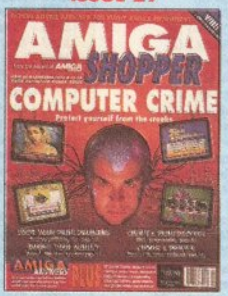
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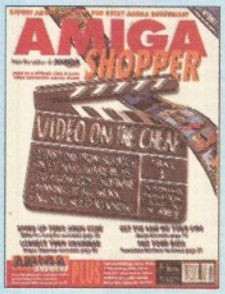
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U118 + North C (2) (A)
U121 + Spread Sheet (A)
U131 + Tetra Copy (A)
U137 + Uedit (A)
U140 + Virus Killer (A)
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U226 + 50 + Most Used Util (A)
U229 + Slide Const Kit (A)
U231 + The Game Tamer (A)
U233 + Speech Toy (A)
U237 + 8 Channel S'Tracker
U242 + Imploder 4.0 (A)
U250 + Video Tool (3) (A)
U255 + Graphic Converter (A)
U261 + Jam Disk (1-10) (A)
U284 + Copy & Crack Tool (A)
U287 + P.C. Q Pascal (2) (A)
U300 + Messy Sid II (A)
U311 + Power Logo (A)
U313 + Printer Utility 3
U321 + Graphic Util (6) (A)
U331 + Power-Menues (A)
U332 + Graphic Const Kit (A)
U334 + Emulator Col II (A)
U335 + Free Copy (A)
U337 + Model 3D (A)
U338 + Multi Visions 1 (A)
U339 + Multi Visions 2 (A)
U343 + Little Office (A)
U350 + Pool Tool (A)
U352 + Desktop Video (A)
U356 + Text Engine V3.4 (A)
U357 + Bon Appetit (A)
U358 + Star Cat 2 (A)
U363 + Disk Repair Kit (A)
U364 + Home Account (A)
U368 + Amicash (A)
U370 + Caption Machine (A)
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U390 + Data Base Pack (A)
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U397 + Form Unlimited (A)
U398 + Mortgage Calc (A)
U399 + Fracscape V1.2 (A)
U401 + Plus1 Issue (1-14) (A)
U420 + Speed Bench (2/3) (A)
U424 + Slidemaker (WB2/3) (A)
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U427 + Printer Studio (A)
U430 + Sound Monitor (A)
U431 + Video Apication (2) (A)
U434 + Oracle (2) (A)
U442 + Sysinfo 2.56 (A)
U444 + Font Farm (A)
U466 + Grape Vine 12 (3) (A)
U477 + Quatermass Exp (2) (A)
U480 + Hard Disk Click (A)
U491 + Protracker V3 (3)
U495 + Hard Disk Util (A)
U505 + Salvage/Repair Kit (A)
U507 + DCopy 3 Proff (A)
U509 + Ultimate Btblock 1 (A)
U513 + Video Titler A (2) (A)
U516 + Amos Fractal (A)
U550 + Scenery Const Kit (A)
U551 + Assassin Boot Block (A)
U555 + Crossword Creator
U558 + Graphic Const Kit
U567 + Text Plus V.4 (A)
U568 + Icon Const Kit (2) (A)
U580 + Picture Box (A)
U581 + Magnetic Pages (A)
U584 + New Super Killer (A)

ANIMATION

A001 Walker 1 & 2 (2) (A)
A004 + Porky Pig (AGA)
A005 + Fillet The Fish (A)
A007 + Franklin the Fly (A)
A008 + Tron (2) (AGA)
A010 + Sculpt Anim 1 (A)
A013 + Space-Probe (A)
A017 + S.T. Fleet (A)
A019 + Stamp Logo Anim (A)
A021 + Coyotes Strike Back
A022 + Luxo Teenagers (A)
A025 + Cool Cougar (A)
A028 + Puggs in Space
A029 + Mike Tyson (A)
A033 + Fractal Flight (A)
A036 + Weird Science I (A)
A037 + Weird Science II (A)
A038 + Batman Movies (A)
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A060 + Walker 1 (2Mb) (2) (A)
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A066 + DBW Render (A)
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A072 + Life a Bitch (18) (A)
A073 + Its Mental III (A)
A082 + Its Mental I (A)
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A115 + Vietnam Conflict (A)
A138 + Kylies A (20) (A)
A141 + Terminator 2 (A)
A150 + Madonna (A)
A151 + Top Gun (A)
A153 + Gulf Tribute (A)
A154 + Thunderbirds (A)
A155 + Rock Album (A)
A157 + Watership Down (A)
A158 Garfield (A)
A175 + Madonna SS II (AGA)
A178 + Kim Wilde Slides (A)
A179 + The Living World (A)
A187 + Peril of the Deep 1 (A)
A188 + Peril of the Deep 2 (A)
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A218 + More Areotoon (A)
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A221 + James Whale Anim
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A226 + New Viz (A)
A230 + Too Much 3D (A)
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A232 + Beach Flight 1 & 2 (A)
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A252 + Space Flight Anim (A)
A255 + Bart Simpson (3) (A)
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A260 + Freddy Dead (A)
A262 + Star Trek (A)
A265 + Let Me Out 1 & 2 (A)
A266 + Colour Cycle
A280 + Gif 1 & 2 (2) (A)
A288 + Saturn Fly By (A)
A289 + Reflection (A)
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A293 + Manga Comic (2) (A)
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A302 + Cat Slideshow (A)
A306 + Tornado (AGA)
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A314 + Scenery Anim (2) (A)
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A334 + Dolphin Dream (A)
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STAR TREK anim

Agatron Vol 1-38

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D008 + Predator (A)
D011 + Multitasking (A)
D013 + Fraxion Revenges (A)
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D033 + Phenomena (A)
D035 + Thames TV Demo (A)
D050 Pink Floyd (6) (A)
D062 + Predators (2) (A)
D068 + Sam Fox Bibs Bobs
D076 + Contact Been Made (A)
D078 + System Violation (A)
D120 + 1911 Voyage
D152 + The Electric Touch
D154 + Virtual Real (2)
D156 + Kylies Demo (2)
D163 + Harlequin Demo (A)
D168 + Silence of the Lamb (A)
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D188 + Peace of Mind
D190 + Software Failure
D201 + Farts Demo (A)
D203 + Hidden Demo (A)
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M005+ 100 C64 Tunes
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M020+ Laurel & Hardy (2) (A)
M025+ Money for Nothing (A)
M026+ Walk on the Way Remix (A).
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M031+ Betty Boo(2) (A)
M040+ Secret PMs Ball (2) (A)
M058+Sgt Pepper Disk (2) (A)
M062+ The Rainbow Demo (A)
M063+Chubby Brown (A)
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M171+Madonna (Virgin) (A)
M177+Pet Shop Boy 4 Tune (A)
M184+Samfox (Please Me) (A)
M186+Madonna (Rescue) (A)
M188+Joe Le Taxi (A)
M194+Jesuc One's (2) (A)
M230+Now Music (1-15)
M262+A to Z C64 Tunes (4) (A)
M274+LSD Techno Warrior (A)
M276+Vivaldi 4 Seasons
M293+Bach Concerto 5/6 (A)
M314+Dick Tracy (2) (A)
M317+Freddy Rapp (A)
M318+Madonna Immaculate Col (A)

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E002+ Colour It (A)
E003+ Treasure Search (A)
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E005+ Learn & Play II
E006+ Spanish Translator (A)
E007+ Education Graphics
E008 Mr Men
E009+ Astronomy (A)
E010+ Simon & Space Math (A)
E011+ Education Disk 1 (A)
E012+ Education Disk 2 (A)
E013+ Education Disk 3 (A)
E014+ Education Disk 4 (A)
E015+ Education Disk 5 (A)
E016+ Education Disk 6
E019+ Dinosaurs (A)
E020 World Database
E021+ Story Land II (A)
E022+ Language Tutor (A)
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E70+ Math Drills (A)
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CA01+ Colour Cartoon
C015+ FS Clipart (1-5)
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C025+ Harlequin Vol 2
C026+ Harlequin Video 1
C027+ Dynamite Fonts 1
C028+ Amsoft Font Clip 1
C029+ Amsoft Font Clip 2
C030+ Various Fonts
C031+ Exile Font Clipart
C032+ Disney Clipart
C033+ Cosmic Clipart
C034+ Space Clipart
C035+ Gelenite Fonts (3)
C043+ Rip-Font & Logo
C044+ Colour Clip Art 1
C051+ Clip Art Vol (1-20)
C101+ IFF Pic Clipart (1-24)

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F001+ F5 Font (1-5)
F015+ Deluxe Paint Font 1
F016+ Deluxe Paint Font 2
F017+ Deluxe Paint Font 3
F018+ Deluxe Paint Font 4
F020+ Halc Font (3)
F023+ Computer Eye Font 1
F024+ Computer Eye Font 2
F025+ Fancy Font Volume 1
F040+ Digi Font Volume 1
F045+ Mega Font Volume 1
F050+PS Logo Font (1-9)
F070+ Pagestream Font (1-6)

SAMPLES

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S151 Mega Modules (1-6)
S171 House Samples A
S172 House Samples B
S173 House Samples C
S174 Noise Less, Mozart
S175 Korge Sample (3)
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Note: the Commercial Games listed are not PD, they are fully priced games (box) subject to availability. All titles in stock.

WHERE TO GET IT

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

The advantage of using a bulletin board (BBS) is that often the latest software is uploaded as soon as it's available. On the downside, you need a modem to connect, and you'll have to pay phone charges (and sometimes a connection fee to the BBS as well).

There is a growing number of BBSs with a wide range of Amiga software available for download. Check out 01 for Amiga (☎ 071 377 1358) and the Cheam Amiga Bulletin Board (☎ 081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has Amiga software but also contains conference and file areas on a wide range of subjects. Many of the *Amiga Shopper* writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on ☎ 081 390 8446 (voice) or ☎ 081 390 1255 (modem).

If you don't want to use a BBS or haven't got a modem, the other way to get PD software is from a PD house. Many advertise in *Amiga Shopper*, and there's a full directory overleaf. Expect to pay between 99p and about £2.50 per disk – there's often a discount if you buy in bulk, too. As for the difference between companies which charge 99p and those which charge £2.50 – well, try both types. Some totally professional PD houses charge less than a quid, and some incompetents charge more than twice that.

continued from page 92

SKSH

Unix users will be familiar with the *ksh* shell — now it's been implemented on the Amiga. It requires *Workbench 2.1* or above to run, and needs a good 3Mb of space on the Workbench partition of your hard disk, but the space is well worth it if you want the features of *ksh* on your Amiga. They include:

- Shell functions
- Aliases
- Command substitution
- Line editing, Emacs style
- Redirection of input and output
- Pipes
- Many Unix-style utilities, such as grep
- ARexx support
- Comprehensive documentation, including 'man' on-line reference pages

All of this, amazingly, is freeware – and is well worth checking out if you're finding the standard Amiga shell restrictive.

SYSINFO

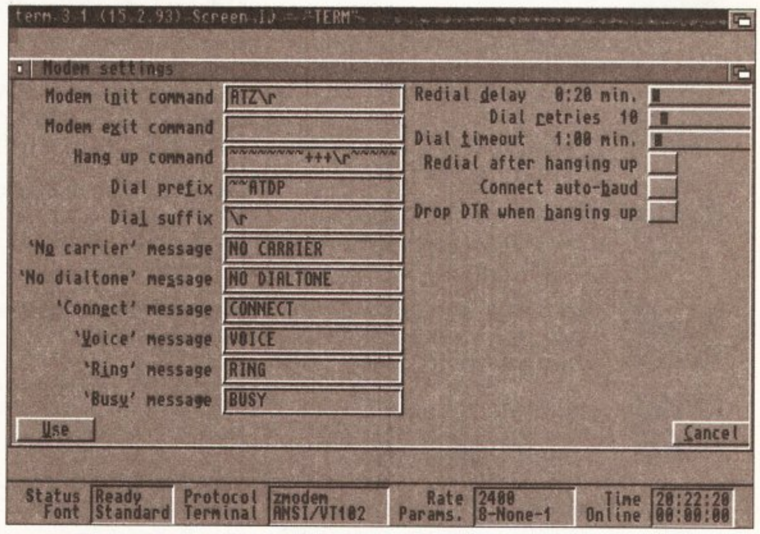
Want to know exactly what's under the hood of your Amiga and how fast it's all running? *SysInfo* is the essential nerds' tool for getting all that information – and much, much more. These vital statistics are grouped into such categories as memory, speed, add-in boards and disk drives — each providing more details than anyone could possibly desire. *SysInfo* will also list information such as which libraries are loaded — useful when you're having trouble with software and you want to make a note of exactly what's installed before you ring the tech support line. The speed tests produce a graph of your Amiga's performance compared with other members of the Amiga family.

TERM

Term is probably the most fully-featured comms program available on the Amiga. Some people prefer other comms packages but, for me, *Term* has always been the winner thanks to the way it implements things like file transfer protocols. Rather than hard-coding things like XModem, YModem and ZModem into the program, they are implemented via 'XPR libraries' — in other words, libraries which live in your **LIBS:** directory. This means that new protocols can be added to the program without a major upgrade of the software — only a new library has to be distributed.
The program's features are too numerous to list but here's a selection:

- Cut and paste of data on-screen
- VT102, VT220 and ANSI terminal emulation
- Supports all screen modes, including AGA and ECS modes
- Fully ARexx controllable
- Unlimited-size scrollable buffer for received data

...and much more!



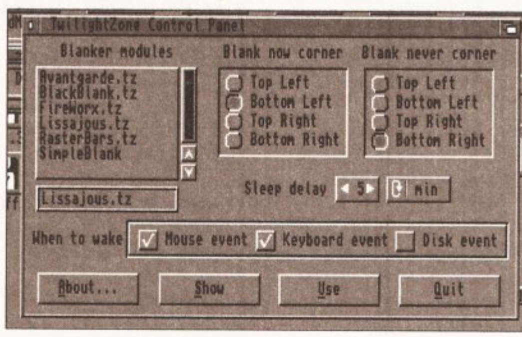
One of the most powerful and configurable Amiga comms packages has to be Term. It'll suit even the most dedicated comms nut.



Bore of Mandelbrot and Julia sets? Why not take a voyage into Lyapunovia space and savour the latest in mathematical journeys?

TWILIGHT-ZONE

If you're a screen-saver fan, *TwilightZone* is pretty much the pinnacle. It's fully customisable and includes a range of different 'modules' — you're not stuck with one display. There are 'blank now' and 'blank never' corners of the screen to immediately invoke the screensaver or to prevent it from kicking in, and you can also, of course, set a time delay after which it will take effect. You can even select what will wake your Amiga up again — mouse events, keyboard events, disk events or a combination of the three.



Save your screen with TwilightZone and its incredible array of attractive, non-phosphor burning display modules.

UNIXDIRS

Do you use a Unix system at work? If so, the chances are that you're forever specifying path names in the Amiga Shell that start with '..' instead of '/'. Get hold of *UnixDirs*. This tiny utility patches calls to AmigaDOS so that you can use '..' and '.' with impunity.

VIEWTEK

This is an extremely powerful freeware image viewing program, which should be able to cope with just about any kind of Amiga image file that you can throw at it.
It supports:

- Most ILBMs, including 24-bit images
- CompuServe GIF-format files
- JPEG images, as long as they are in JFIF format
- ANIM7 animations
- SHAM, CTBL and PCHG images
- ECS and AGA display modes – so it will show 256-colour images

VIRUSZ

If you haven't got a virus killer running on your Amiga, you're asking for trouble (regular readers of this column will know that I was caught out last month). *VirusZ* is one of the best although there are others — just make sure that you have something up and running at all times. And do make sure that it's an up-to-date version as the idiots that create viruses are always in the process of making new ones.

UK PD HOUSES • UK PD HOUSES

***An asterisk by a library's name means see its advert in this issue for further details.**

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea SA5 7EH.

Amiganuts United, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

***Anglia PDL,** 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW, ☎ 0394 283494.

***Anim1 PD,** 2 Fatherwell Avenue, West Malling, Kent ME19 6NG.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Artman, 40 Northwell Gate, Otley, West Yorkshire LS21 2DN. Phone ☎ 0943 466476.

Asgard PD, 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW. Phone ☎ 0924 363059.

Batty's PD. Contact Ian or Lynn Battison, 7 Denmark Road, Northampton NN1 5QR. ☎ 0604 22456. Life membership £3.99.

Beats Brothers, 6 Brownings Close, Pennington, Lymington, Hampshire SO41 8GX.

Belshaws PD. 55 Baldertongate, Newark, Notts. NG24 1EU, ☎ 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN, ☎ 0535 667469.

BTK, 7 Callander Road, Catford, London SE6 2QA ☎ 081 473 1650.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN, ☎ 0484 516941.

C and C PD. Contact Chris Wildman, 3a The Cedars, Tilehurst, Reading, Berks. RG3 6JW, ☎ 0734 411131.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD. Free, non-profit-making PD, membership £5 per year. Contact Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB, ☎ 0492 533442.

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 0PE. ☎ 021 779 6368

***CP PD,** (in association with NFA Productions) 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 0EJ, ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL, ☎ 0709 829286.

Crazy Software PD, 50 Woodville Court, Portobello, Wakefield, West Yorkshire WF2 7DU.

Deja Vu, 7 Hollinbrook, Beech Hill, Wigan WN6 7SG, ☎ 0942 495261.

***Diskovery PD,** 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ, ☎ 0274 880066.

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ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT, ☎ 081 346 0050.

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17-Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire WF1 1DH. Phone: ☎ 0924 366982.

Softville, 35 Market Parade, Havant, Hants PO9 1PY ☎ 0705 498199.

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Startronics, 4 Arnold Drive, Droylsden, Manchester M35 6RE, ☎ 061 370 9115.

Tazmania PD, 4 Boultham Avenue, Lincoln LN5 7XZ, ☎ 0522 538706 (after 6 pm).

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PAINT PROGRAMS

Product	Supplier	Price	Screen Modes	Max Colours	Overscan	Animation	Rating	Issue
Brilliance	Meridian	£149.99	L/LI/M/H/A	262,000	Yes	Yes	*****	32
Deluxe Paint 4	Electronic Arts	£90	L/LI/M/H	4096	Yes	Yes	*****	10
Deluxe PhotoLab	Electronic Arts	£130	L/LI/M/H	4096	Yes	No	***	2
DigiPaint 3	Silica Systems	£80	L/LI	4096	Yes	No	****	2
The Graphics Studio	Accolade	£50	L/M	32	No	No	***	2
Personal Paint	MicroPACE	£59.95	L/LI/M/H/S/A	262,000	Yes	Yes	****	26
Photon Paint 2	MicroIllusions	£90	L/LI	4096	Yes	Yes	*****	2
RPaint	MegageM	£52.25	L/LI/M/H	64	Yes	No	***	33
SpectraColour	HB Marketing	£60	L/LI	4096	Yes	Yes	***	5

L = Low-Res, LI = Low-Res Interlaced, M = Medium, H = High-Res, S = Super Hi-Res, A = AGA

ANIMATION SOFTWARE

Product	Supplier	Price	ANIM Compat	Onion Skin	X-Sheet	Sound	Rating	Issue
Disney Animation Studio	Silica	£80	Yes	Yes	Yes	Yes	****	1
MovieSetter	Silica	£80	No	No	No	Yes	****	14,23
Take-2	Rombo	£49	No	No	Yes	Yes	****	14

SOLID MODELLING / RAY-TRACING

Product	Supplier	Price	Ray Tracing	24-bit	Animation	Bump Maps	Textures	Rating	Issue
Aladdin 4D	MicroPace	£260	No	Yes	Yes	No	Yes	***	25
Caligari 24	Amiga Centre Scotland	£99.95	Yes	Yes	No	No	Yes	***	33
Draw 4D	Surface UK	£150	No	No	Yes	No	Yes	***	7
Expert 4D Junior	Genisoft	£39.95	Yes	No	No	No	Yes	****	21
Imagine	Silica	£235	Yes	Yes	Yes	No	Yes	*****	4,7,20
Imagine 2	Computech	£270	Yes	Yes	Yes	Yes	Yes	****	14
RayDance	Radiance	£100	Yes	Yes	No	Yes	Yes	***	14
Real 3D 1.4	Alternative Image	£120	Yes	Yes	Yes	Yes	Yes	*****	4,7,20
Sculpt 4D	Alternative Image	£400	Yes	Yes	Yes	No	Yes	*****	7
3D professional	Marcam	£260	Yes	Yes	Yes	No	Yes	***	7

MISC. GRAPHICS

Product	Supplier	Price	Type	Rating	Issue
AccuTrans 3D	MicroMouse	£39.29	3D object conversion	****	33
CineMorph	Silica	£99.95	Morphing program	****	23
Clip Art	Artworks	£6.95	Various IFF clip art files	–	29
Essence II	Alternative Image	£100	Algorithmic textures	*****	32
FlightPaths	Meridian	£49.95	Animation effects for DPaint	****	26
Fractal Pro	MegageM	US$209.95	Fractal graphics generator	–	29
Genesis	MicroIllusions	£50	Fractal Landscapes	****	11
MakePath	Meridian	£24.99	Animation editor for VistaPro	****	26
Morph Plus	MicoPace	£180	Morphing program	****	23
Nexus Backdrops	VideoWorld	£29.95	Backdrops for video	****	33
Pixel 3D Pro	Micro-PACE	£144.95	Convert bitmaps to solid 3D	***	29
Terraform	Meridian	£34.99	Landscapes editor for VistaPro	****	26
Textures II	Alternative Image	£40	Brush map textures	****	32
VistaPro	Meridian	£100	Fractal Landscapes	*****	7

IMAGE PROCESSORS

Product	Supplier	Price	24-bit	Max Colours	File Formats	Composition	Colour Control	Rating	Issue
Art Department	Silica	£100	Yes	16.7 m	Many	No	Yes	N/A	–
Art Department Pro	Silica	£200	Yes	16.7 m	Many	Yes	Yes	*****	10
ImageFX	Silica	£269.95	Yes	16.7 m	Many	Yes	Yes	****	27
ImageMaster	Amiga Centre Scotland	£175	Yes	16.7m	IFF	Yes	Yes	*****	18

PAGE LAYOUT PACKAGES

Product	Supplier	Price	Outline Fonts	Pantone	Postscript	24-bit Col	Colour Sep	Rating	Issue
CityDesk	Precision	£130	No	No	Yes	No	No	N/A	–
PageSetter 2	Silica	£100	Yes	No	No	No	No	N/A	–
PageStream 2.2	Meridian	£69.95	Yes	No	Yes	Yes	Yes	***	2,3
ProPage 4	Silica	£199.95	Yes	Yes	Yes	Yes	Yes	*****	27
Saxon Publisher	Surface UK	£250	Yes	No	Yes	Yes	Yes	***	17

STRUCTURED DRAWING PROGRAMS

Product	Supplier	Price	Bezier Curves	Postscript	Outline Fonts	EPS compat	Rating	Issue
Art Expression	Silica	£150	Yes	Yes	Yes	Yes	****	24
DesignWorks	Silica	£100	Yes	Yes	Yes	No	N/A	–
ProDraw 3.0	Silica	£132	Yes	Yes	Yes	Yes	****	20

CAD PACKAGES

Product	Supplier	Price	DXF Compat	No. Of layers	Vector Fonts	PostScript	Rating	Issue
DynaCADD	Teleware	£650	Yes	256	Yes	Yes	****	3
UltraDesign	Marcam	£200	Yes	128	Yes	Yes	N/A	–
X-CAD 2000	Digital Multimedia	£129	Yes	255	Yes	With util included	N/A	–
X-CAD 3000	Digital MultiMedia	£300	Yes	255	Yes	With util included	N/A	–

UTILITIES

Product	Supplier	Price	Type	Rating	Issue
Ami-Back	Micro-PACE	£69.99	Hard Disk Backup	****	29
ASIM CDFS	Micro-Pace	£49.95	CD-ROM filing system	****	33
CanDO 2.51	INOVAtronics	£149.95	Applications generator	****	33
Director 2	Alternative Image	£100	Video Presentation scripting language	***	19
Directory Opus 4	Silica	£64.95	Directory utility	*****	28
DOS Lab	GTS	£19.99	AmigaDOS help disk	***	26
Essence	Apex Software	£80	Algorithmic textures for Imagine 2	****	20
Flow 3.0	Silica	£80	Ideas Processor	***	10
GB Route Plus	Complex Computers	£80	Journey Planner	*****	10

PRODUCT LOCATOR

GB Route Plus Edit	Complex Computers	£30	Editor For GBRoute	****	10
GigaMem	Gasteiner	£69.95	Virtual memory system	*****	33
Hit Kit!	Gajits	£25	Sequences for Sequencer One	***	16
Home Office 2	Gold Disk	£99	Integrated applications software	*****	20
HotLinks	Silica	£70	Add on for PageStream 2.2	**	16
Maple V	Chapman & Hall	CAN$530	Algebra solving utility	****	29
MapMaster	Alternative Image	£54	Image Mapping package	****	14
Music Librarian	ARK	£39.95	Dedicated music database	***	33
NCommand Pro	Oasis	£15	Intuition extension for AMOS	***	33
PowerWaves 3.1	Database	£17.95	Create wave-based 3D objects	****	21
Proper Grammar II	Gordon Harwood	£39.95	Grammar checker	*	30
Real Things	Living Data	£29.95	Animated animal brushes for DPaint	****	20
Resource	Helios	£130	Macro disassembler	*****	33
Studio	JAM	£49.95	Printing utility	*****	33
Product	Supplier	Price	Type	Rating	Issue
Reverser	Alternative Image	£10	Animation Utility	****	17
SaxonScript	Surface UK	£100	Postscript interpreter	***	15
Shades	Meridian Software	£60	Gradient fills for PageStream	**	16
Smooth Talker	Zen Computers	£140	Video Prompting package	****	16
SurfaceMaster	Alternative Image	£28	Add on for Imagine	****	14
Touch Typist	Sector Software	£14	Teach yourself touch typing	****	15
Turbo Print Pro	Meridian	£49.95	Enhanced printing	****	11, 12
TypeSmith	Soft Logic	£135	Outline font editor	*****	26
Word Power	Steve Rennocks	£9.95	Crossword solver	–	30

WORD PROCESSORS

Product	Supplier	Price	Spell Checker	Thesaurus	Picture Import	Rating	Issue
Cygnus Ed 3	Silica	£79.95	No	No	No	*****	33
Excellence 3	HB Marketing	£79.95	Yes	Yes	Yes	****	25
Final Copy 2	Gordon Harwood	£100	Yes	Yes	Yes	****	25
Final Writer	Gordon Harwood	£129.95	Yes	Yes	Yes	*****	33
KindWords 3.0	Silica	£80	Yes	Yes	Yes	**	25
Mini Office 2	Europress	£69	Yes	NO	No	****	17
Pen Pal	Harwoods	£80	Yes	No	Yes	****	6,9,25
Personal Write	MicroPace	£30	No	No	No	*	25
ProWrite 3.2	Silica	£143	Yes	Yes	Yes	***	12
Protext 5.5	Arnor	£150	Yes	Yes	No	*****	6,9,25
Word Perfect	Sentinel	£230	Yes	Yes	No	N/A	–
Wordworth 2 AGA	Digita	£129.95	Yes	Yes	Yes	****	33

DATABASES

Product	Supplier	Price	Type	Programmable	dBASE Compatible?	Rating	Issue
InterBase	InterActivision	£29.95	Card Index	No	Yes	****	26
PowerBase 3.34	Steve Rennocks	£14.95	Card Index	No	No	****	30
ProData 1.2	Arnor	£100	Card Index	No	Yes	****	9
Mini Office 2	Europress	£69	Card Index	No	No	***	17
SuperBase	Precision	£30	Relational	No	Yes	****	9
SuperBase 2	Precision	£100	Relational	No	Yes	****	9,12
SuperBase Pro 4	Precision	£400	Relational	Yes	Yes	*****	4,9

SPREADSHEETS

Product	Supplier	Price	Lotus Compatibility	Graphs	Rating	Issue
Advantage	Silica	£100	Yes	Yes	****	1,9
DGCalc	Digita	£40	No	No	N/A	–
K-Spread 3	Kuma	£70	Yes	Yes	***	9
K-Spread 4	Kuma	£100	Yes	Yes	****	9
Maxiplan 4	Meridian	£49.95	Yes	Yes	***	18
Mini Office 2	Europress	£69	No	Yes	***	17
ProCalc	Silica	£150	Yes	Yes	N/A	–

MULTIMEDIA

Product	Supplier	Price	Interactive	External Drivers	ARexx	Rating	Issue
AmigaVision	Commodore	£80	Yes	Yes	Yes	N/A	–
CanDo 1.5	Checkmate Digital	£130	Yes	No	Yes	N/A	–
HyperBook	Silica	£100	Yes	No	Yes	****	6
Viva!	MicroDeal	£200	Yes	Yes	No	N/A	–

VIDEO TITLERS

Product	Supplier	Price	Overscan	Transitions	Amiga Fonts	Horiz Crawl	Rating	Issue	
Alternative Scroller	Alternative Image	£50	Yes	No	No	Yes		N/A	–
Broadcast Titler	Meridian	£327.27	Yes	Yes	No	Yes		****	2
Scala 1.1	Silica	£250	Yes	Yes	Yes	No		*****	2
Scala 500	Silica	£100	Yes	Yes	Yes	No		N/A	–
Scala MM200	Scala UK	£395	Yes	Yes	Yes	Yes		*****	21
Video Caption Designer	Maze	£200	Yes	No	Yes	Yes		***	3
Video Ease	Interactive Tchnology	£40	Yes	Yes	Yes	Yes		**	11

DESKTOP VIDEO UTILITIES

Product	Supplier	Price	Type	Rating	Issue
Adorage	MicroPace	£79.95	Video Effects System	****	24
AntiA	Zen	£40	Font Enhancer	****	8
Deluxe Video 3	Electronic Arts	£100	Presentation System	N/A	–
Elan Performer 2	Silica	£180	Presentation System	****	11
ShowMaker	Silica	£250	Presentation System	***	10

MIDI SEQUENCERS

Product	Supplier	Price	No. of Tracks	Amiga Smpls	Song Arrange	Rating	Issue
Bars&Pipes Pro	Zone	£200	Unlimited	Yes	Yes	*****	3
KCS 3.5	Zone	£280	48	Yes	Yes	*****	8
Master Tracks	MCM	£200	64	No	Yes	***	–
Music-X	MicroIllusions	£150	256	Yes	No	****	–
Music-X Junior	MicroIllusions	£50	256	Yes	No	****	–
OctaMED Professional	SeaSoft Computing	£30	16	Yes	Yes	****	29
Pro-24	Evenlode	£300	24	No	Yes	***	4
Sequencer One	Gajits	£90	20	Yes	Yes	****	2
Sequencer One Plus	Gajits	£50	32	Yes	Yes	****	16

PRODUCT LOCATOR

PRODUCT LOCATOR

SOFTWARE

Tiger Cub	**Zone**	**£100**	**12**	**Yes**	**Yes**	********	**–**
Trax	MCM	£70	64	No	Yes	*****	–

MISC MIDI SOFTWARE

Product	Supplier	Price	Type	Rating	Issue
Audio Sculpture	SMG	£50	Sample Sequencer	**	12
CMPanion	**Gajits**	**£100**	**Patch Editor**	****	**6**
Caged Artist	Zone	£100	Patch Editor	***	6
Copyist Apprentice	**Zone**	**£100**	**Score Notation**	****	**–**
Copyist DTP	Zone	£230	Pro Score Notation	****	–
Dr T Boom Box	**Zone**	**£45**	**Music for beginners**	***	**21**
Mugician	Thalamus	£30	Sample Sequencer	***	–
Quartet	**MicroDeal**	**£50**	**Sample Sequencer**	***	**–**
SuperJAM!	Blue Ribbon Sound.	£100	Algorithmic Composition	****	15
TechnoSound Turbo 2	**New Dimensions**	**£49.95**	**Sample editor**	****	**30**
X-Or	Zone	£220	Librarian	****	6

EDUCATIONAL SOFTWARE

Product	Supplier	Price	Type	Rating	Issue
Answer Back Quiz	Kosmos	£20	3 'R's	****	3
Better Maths	**School Software**	**£23**	**Maths**	***	**4**
Better Spelling	School Software	£23	Writing	****	3
Cave Maze	**Coombe Valley**	**£12**	**Quiz**	***	**7**
Count & Add	Lander Software	£26	Maths	****	10
Donald's Alphabet Case	**Entertainments Int.**	**£25**	**Reading**	***	**2**
Early Learning Maths	ESP Software	£20	Maths	***	6
First Letters	**Rainbow**	**£8**	**Reading**	***	**7**
French Mistress	Kosmos	£20	French	****	4
Fun School 3	**Europress**	**£25**	**3 'R's**	*****	**2**
Fun School 4	Europress	£25	3 'R's	*****	9
Game, Set & Match	**GeniSoft**	**£21**	**Maths**	**	**2**
Hooray For Henrietta	Sketlander	£25	Maths	***	2
Kids Type	**GeniSoft**	**£25**	**Writing**	****	**2**
Learn to Read With Prof	Prisma	£25	Reading	***	2
Let's Spell	**Softstuff**	**£20**	**Writing**	****	**2**
Magic Maths	School Software	£23	Maths	***	2
Maths Adventure	**Kosmos**	**£26**	**Maths**	***	**12**
Maths Blaster Plus	Ablac Computec	£40	Maths	***	3
Maths Dragons	**Coombe Valley**	**£12**	**Maths**	***	**7**
Maths Mania	School Software	£23	Maths	****	3
Mickey's Zoo	**Entertainments Int.**	**£25**	**Maths**	***	**2**
MicroFrench	LCL	£24	Language Tutor	****	17
Money Matters	**Triple 'R' Educational**	**£20**	**Money**	*****	**–**
Pepe's Garden	Prisma	£26	3 'R's	****	10
Pick A Puzzle	**Deja Vu**	**£2.50**	**Jigsaw**	***	**2**
Picture Book	Triple 'R' Education	£20	3 'R's	*****	10
Play It Safe	**Deja Vu**	**£3.50**	**General**	****	**2**
Puzzle Book 1	Softstuff	£20	3 'R's	****	2
Reasoning With Trolls	**Coombe Valley**	**£15**	**Quiz**	****	**8**
Sesame Street	Merit Software	£16	Painting	***	2
Shapes & Colours	**Rainbow**	**£8**	**Basic**	****	**7**
Spell Book	SoftStuff	£8	Writing	****	6
Spell!	**Europress**	**£9**	**Writing**	***	**3**
Spellbound	Lander Software	£26	Writing	****	10
SpellCopter	**ESP Software**	**£20**	**Writing**	****	**6**
The Three Bears	School Software	£23	Reading	***	2
Things To Do With Words	**Softstuff**	**£20**	**Writing**	***	**2**
Weather Watcher	GeniSoft	£25	Weather	***	4
What Is It?	**GeniSoft**	**£20**	**Geography**	****	**4**

PROGRAMMING LANGUAGES

Product	Supplier	Price	Language	Compiler	Rating	Issue
AMOS	Europress	£50	BASIC	Separate	*****	3,9
AMOS 3D	**Europress**	**£30**	**BASIC Extension**	**–**	*****	**5,7**
AMOS Compiler	Europress	£30	Compiler	Yes	****	5,9
AMOS Professional	**Europress**	**£69.95**	**BASIC**	**Separate**	*****	**20**
AMOS Pro Compiler	Europress	£34.99	Compiler	–	****	30
Aegis Visionary	**Precision**	**£59**	**Adventure**	**Yes**	***	**17**
Blitz	Siren Software	£70	BASIC	Yes	***	3,9
Devpac 3	**HiSoft**	**£70**	**Assembly**	**–**	*****	**10,12**
Easy AMOS	Europress	£35	BASIC	No	*****	12
GFA BASIC 3.5	**GFA Data Media**	**£50**	**BASIC**	**Separate**	****	**3,9**
GFA Compiler	GFA Data Media	£30	Compiler	–	****	3,9
HiSoft BASIC	**HiSoft**	**£50**	**BASIC**	**Yes**	****	**9**
HiSpeed Pascal	HiSoft	£100	Pascal	Yes	****	19
Lattice C 5	**HiSoft**	**£230**	**C**	**Yes**	*****	**3,9**
M2 Amiga	Real Time Associates	£125	Modula-2	Yes	****	7,9

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Supplier	Phone
Ablac Computec	0626 331464
Accolade	071 738 1391
Alternative Image	0533 440041
Amiga Centre Scotland	031 557 4242
Arnor	0733 68909
Artworks	0469 588 138
Checkmate Digital	0707 664684
Cloudhall	0604 231211
Commodore	0628 770088
Complex Computers	0706 224531
Computech	0702 206165
Coombe Valley	0626 779695
Deja Vu	0942 495261
Digita	0395 270273
Digital Multimedia	0702 206165
Electronic Arts	0753 549442
Entertainments Int	0268 541212
ESP Software	0702 600557
Europress	051 357 1275
Evenlode SoundWorks	0993 898484
ExpressWorks	0252 726255
Gajits Music Software	061 236 2515
GeniSoft	0753 686000
GFA Data Media	0734 794941
Harwoods	0773 836781
HiSoft	0525 718181
Interactive Technology	0423 501321
Kosmos	0525 53942
Kuma	0734 844335
Lander Software	041 357 1659
Marcam Ltd	071 258 3454
MCM	081 963 0663
MegageM	0101 865 349 1104
Micro-PACE	0753 551 888
Meridian	081 543 3500
Merit Software	0101 214 385 2353
MicroIllusions	0480 496497
New Dimensions	0291 690 933
Omega Projects	0942 682206
Prisma Software	0244 326244
Radiance	0101 408 270 7420
Rainbow	0392 77369
Real Time Associates	081 656 7333
Rombo Productions	0506 466601
Scetlander	041 357 1659
School Software	010 353 61 45399
Seasoft	0903 850378
Sentinel	0932 231164
Silica	081 309 1111
Siren Software	061 724 7572
SMG	0274 562999
Softstuff	0732 351234
Surface UK	081 566 6677
Teleware	0562 882 125
Triple 'R' Software	0742 780370
Zone	081 7666564

BUYING ADVICE FOR SHOPPERS

Whether you're buying over the phone or at a local store, here's our advice on getting what you want.

BUYING IN PERSON

• Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.
• Make sure you have all the necessary leads, manuals or other accessories you should have.
• Don't forget to keep your receipt.

BUYING BY PHONE

• Be as clear as possible when stating what you want to buy and make sure you confirm all the technical details. Things to bear in mind are version numbers, memory requirements, other hardware or software required, and compatibility with your Amiga (be sure you know which version of Kickstart you have).
• Check the price you are asked to pay, and make sure that it's the same as the price advertised.
• Check that what you are ordering is actually in stock.
• Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
• Make a note of the date and time when you order the product.

BUYING BY POST

Again, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up. Also make sure you keep copies of all correspondence.

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Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit-making operations. AS

BUYING BY MAIL

• Before you send any money, ring the supplier to confirm that the item you want is in stock and when the delivery is likely to be made. Enquire about returning unwanted goods and the supplier's refund policy. Find out about hidden extras like postage and packing charges, and whether the prices quoted include VAT.

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• Always buy from the most recent issue of *Amiga Shopper*.

• When your order arrives, check everything carefully. If anything is missing, don't use the product at all – contact the supplier immediately. If something doesn't work, make the obvious checks such as the fuse, but don't try to fix the product.

• If a problem does arise, contact the supplier in the first instance and calmly and politely explain your problem. In most cases these things are merely a mix-up or a misunderstanding that the supplier will happily put right. If you think you have a genuine grievance that has not been resolved, you might consider contacting your local Trading Standards Officer (the number will be in the phone directory – check the local council listing).

• Always keep records of correspondence with any mail order company you deal with and also make a note of where and when you saw the product advertised. False or misleading advertising is an offence, and suppliers must stick to what they've said in adverts.

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AMIGA SHOPPER

Issue 35 - March 1994

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IN NEXT MONTH'S ISSUE

How many of you, we wondered, own of one of these fancy 3D rendering packages? And how many of you, we wondered further, are just dying to know how to use them effectively to achieve the sort of high quality results you're used to seeing in the pages of this and other magazines, on TV and at the movies?

We reckon that, what with one thing and another, not least our sister magazine *Amiga Format* having recently included a copy of *Imagine 2.0* on their cover disk, there's probably a lot of you out there fitting the particlar bill outlined by our wonderment.

The quick-witted among you have probably already anticipated the final stage in our golden strand of logic – if there's all those people wanting to know how to use 3D rendering software to create stunningly modelled images, why don't we write a feature telling them how to do just that?

So we did. And we'll be printing it next month.

In it you'll find a step-by-step guide to creating an impressive scene containing a spaceship hovering over an alien landscape. We'll take you from the basics of modelling each individual element to compositing them together and rendering the result. As if all this wasn't enough, we'll be showing you how to do it all for each of the popular rendering packages – *Imagine*, *Real 3D* and *Caligari*.



Here's the two 3D objects from this month's cover disk, ready for rendering in Imagine 2. If you want to know how to create similar objects yourself, you need the next issue.

We'll be carrying a review of the long-awaited version 2 of *TypeSmith*, the font creation and manipulation package from Soft-Logik, one of the leaders in desktop publishing software for the Amiga.

Other products also coming under that famous *Amiga Shopper* scrutiny are the new real-time colour digitsers from Rombo and the multimedia presentation package *Scala MM300*. Find out if they're worth your pennies next month.

The programming-oriented among you will be champing at the bit to read our next Masterclass feature, in which Paul Overaa presents a program to output MIDI data from standard song files.

Amiga Shopper issue 36 – the modelling madness issue – will be going on sale Tuesday 1 March. See you then. AS

WIN A YEAR'S FREE SUBSCRIPTION

Who wrote the book *Absolute Beginners*? Send your answers to "Compo with tenuous link to the cover feature", *Amiga Shopper*, 29 Monmouth Street, Bath BA1 2DL. The closing date is Tuesday 8 February. The first correct answer wins a year's free subscription. Last month's winner was Andrew Bathgate of Herne Hill, London.

YOU'VE WON!

There now follows, as part of our on-going bid to inform, a list of the lucky winners of issue 33's *Write On* competition: RC Graham of Chipping Norton, Oxon, R Boxer of Fleet, Hants, IR Knowles, Colwick, Nottingham, Naim Hosein of Dublin, Ireland, Andy Kyle of High Wycombe, Stan Wilson of Portadown, County Armagh, N D'Costa of Stockport, AP Holmes of Chatham, Kent, R Gardner of Canley, Coventry and Jon Hind of Letonworth, Herts. Well done!

MAG*SAVE

AMIGA SHOPPER SELLS LIKE TISSUES IN A FLU EPIDEMIC – MAKE SURE YOU RESERVE A COPY AT YOUR LOCAL NEWSAGENT NOW!

DEAR NEWSAGENT, Please reserve/deliver me a copy of *Amiga Shopper* every month, beginning with the April issue, which goes on sale on Tuesday 1 March.

Name ______________________

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• NOTE TO NEWSAGENT: *Amiga Shopper* is published by Future Publishing (0225 442244) and is available from your local wholesaler.

• PS Oh, and if you do have any problems getting hold of your favourite Amiga mag, call Kate Elston on 0225 442244 and she'll help you out.

AMIGA SHOPPER

AT-A-GLANCE GUIDE

To help you find what you want quickly and easily, here is a cross-referenced list of everything covered in this month's *Amiga Shopper*. You'll find a detailed index to the problem-solving *Amiga Answers* section on page 37. The page numbers given are for the first page of the article in which the subject is mentioned.

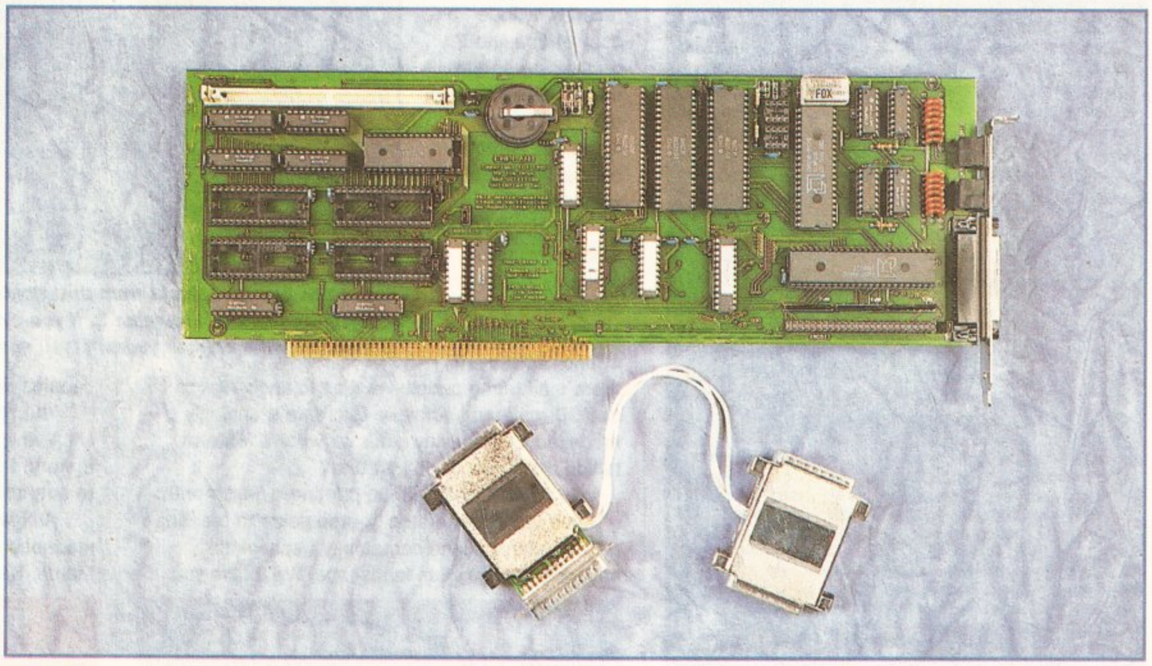
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VTClock	32
XCAD	5
Zappo disk drive	5

Are there any products or subjects you'd like us to take a look at? Well, just drop a line to: *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

WIN • WIN • WIN • WIN • WIN • WIN

Emulation sensation

Turn your Amiga into a fully-fledged Mac with £400 worth of Emplant, kindly donated by Blittersoft



That's right – UK distributors Blittersoft have given us an Emplant Mac emulator, worth £399.95, to offer to you as a competition prize. As usual, all you have to do to win is answer the three embarrassingly easy question in the box below and get lucky when we come to draw a postcard or sealed envelope from the editor's postcard and sealed envelope retaining device.

Emplant is a circuit board that will fit into any Amiga with a spare Zorro slot. Your machine will need a minimum of 4Mb of RAM and a 68020 procesor or better. You will also need access to a 256K ROM fdrom a MacII, X, CX or SE30.

Once fitted, it will enable you to run lots of lovely Apple Mac applications *at the same time* as ordinary Amiga ones. It's compatible with just about every Mac application there is.

Emplant supports colour displays, giving you 16 colours with an ECS Amiga, 256 with an AGA Amiga, and as many as 16.7 million with supported graphics cards. It also supports stereo sound.

It can make use of AmigaDOS hard disk partitions, or connect to other hard drives via its in-built SCSI adaptor, which provides a transfer rate for both the Amiga and Mac of over 1Mb per second.

The Deluxe model that we are giving away also comes with an AppleTalk serial interface, enabling it to be connected to other Macs in a network. You can plug in printers, modems, MIDI devices, SyQuest drives, scanners, graphics tablets, CD ROMs and more. The Mac emulation can also access AmigaDOS devices such as RAD:.

And what's more, you'll also be able to emulate other machines with the addition of expansion modules – the next one scheduled being an IBM emulator for £99.95.

To enter, put the answers to the questions below, along with your name and address, on a postcard or the back of a sealed envelope and send it to:

Emulation Sensation
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL

The closing date for entries is Friday 4 March. Send only one entry per household and please state if you don't want your name included on a mailing list. AS

THE QUESTIONS

1. Which editor of *Amiga Shopper* went on to edit *Mac Format*?
(a) Bob Wade
(b) Stuart Anderton
(c) Andy Storer

2. Which famous swordsman gave his name to the Amiga's slots?
(a) Cyrano de Bergerac
(b) Zorro
(c) Conan the Barbarian

3. Which spy wore a mac a lot?
(a) Harry Palmer
(b) James Bond
(c) Napoleon Solo

WIN • WIN • WIN • WIN • WIN • WIN

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2.5" Hard Drives for A600/A1200

40 MEG	£119
80 MEG	£189
120 MEG	£209
250 MEG	£349

Including lead, fixing screws & instructions

External A1200 Hard Drives
(These do not void your warranty)

210 MEG	£299
340 MEG	£419

A500/A500+ Hard Drives

80 MEG	£199
170 MEG	£269
254 MEG	£299

By the time you read this, Hard Drive prices may have fallen. Please phone for latest prices

PRINTERS & RIBBONS

Star LC20 .... £133.00
Star LC100 Colour £159.00
Star LC200 Colour £194.00
Seikosha SP1900 9 Pin Mono £109.95
Seikosha SL95 24 Pin Col £189.95
Star LC24-30 + Auto Sheet Feeder £229.95
Star LC24-200 Colour £274.00

LC20/LC100 mono ribbon £4.50
LC100 colour ribbon £6.75
LC24 200 mono ribbon £5.50
LC24 200 colour ribbon £13.50
LC200 mono ribbon £4.50
LC200 colour ribbon £9.75

LEADS & CABLES

Printer £3.99
Serial £3.99
Null Modem £5.99
Joystick Extender 3 metre £3.99
Joystick/Mouse Extender £3.99
Amiga to SCART £7.99
Amiga to 1084S/8833 .... £7.99
Analog Joystick Adapter £4.99
4 Player Adapter £5.99

LOOK! LOOK! LOOK!

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A500 1.5 Meg Ram exp £76.95
A500+ 1 Meg Ram exp £33.95
A1200 2 Meg Ram exp £109.95
A500 Power Supply £29.95

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3.5" DSDD Grade A .... £0.37 each
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3.5" Rainbow .... £0.44 each
3.5" DSHD .... £0.58 each

3.5" DSDD Fuji (box of 10) £4.90
3.5" DSHD Fuji (box of 10) £8.90
5.25" DSDD Fuji (box of 10) £2.50
5.25" DSHD Fuji (box of 10) £4.90

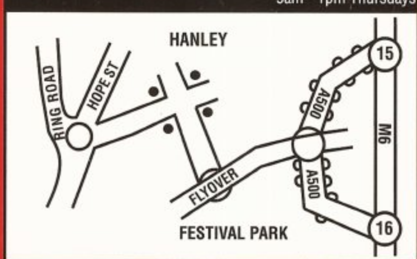
1000 3.5" labels £6.50
1000 3.5" tractorfeed £8.50

STORAGE BOXES

Most types are available for 3.5" or 5.25" disks.

10 capacity £0.95
20 capacity £1.95
40 capacity £3.49
50 capacity £3.95
100 capacity £4.50
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200 capacity drawer £14.95

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MISCELLANEOUS

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A600 Dustcover £3.50
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Monitor Dustcover £3.50
LC20 Dustcover £3.50
LC100 Dustcover £3.50
LC200 Dustcover £3.50
LC24-200 Dustcover £3.50
Roboshift £13.95
Amiga Lightpen £29.95
Optical Mouse £32.00
Megamouse £11.95
Megamouse II 400 DPI £12.95
Point Mouse £12.95
Altadata Trackball £26.95
Crystal Trackball £32.00
Zydek Trackball £25.95
Zyfi Amp/Speakers £37.50
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Action Replay Mk III £56.95
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Tilt/Turn Monitor Stand £9.95
2-piece Printer Stand £3.49
Metal Printer Stand £8.99
A4 Copyholder £5.99
Metal Angle Poise Copy Holder £14.95
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All joysticks have autofire feature except those marked *.

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Python 1M £7.99
Jetfighter £12.00
Topstar £19.50
Intruder £21.50

Base Fire Button Models
Maverick 1M £12.95
Zipstick £12.95
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Comp Pro Extra £12.95
Comp Pro Star £12.95
Cruiser Multicolour* £9.95
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Advanced Gravis Clear £27.99
Comp Pro Star MINI £14.95
Aviator 1 Flightyoke £23.50

Handheld Models
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Navigator £13.95
Bug £12.00

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These Joysticks will fit any Amiga

Warrior 5 .... £14.95
Saitek Megagrip 3 .... £19.50
Speedking Analog £13.95
Intruder 5 .... £25.50
Aviator 5 Flightyoke £27.50

Adapter to use any PC analog joystick on an Amiga .... ONLY £4.99

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Now you can produce stunning high quality colour outputs on paper, transparency film or even T-shirt transfer paper from your Amiga. Primera uses thermal wax transfer technology, a technology usually associated with much higher priced printers.

BLUE CHIP AWARD

The Primera colour printer, recent recipient of countless awards in the IBM-PC and Macintosh markets, is also the perfect companion to any Commodore Amiga.

primera *features*

- Software drivers for Amiga, PC and Macintosh
- Prints A4 and A4+ size paper and transparencies
- Monochrome ribbon cartridges available for economical text only printing
- Print full colour 24-bit photographs
- Optional Photo-Realistic upgrade kit (Dye-sublimation)
- Produce photographic quality images for a fraction of the cost of similar devices
- Extremely small footprint, not much larger than A4

Primera printer	£825
Photo-Realistic upgrade kit	£215.95
Photo-Realistic refill kit (100 prints)	£250
Photo-Realistic refill kit (25 prints)	£79.95
4 Colour ribbon (80 prints)	£38.95
3 Colour ribbon (115 prints)	£38.95
Monochrome ribbon (400 prints)	£34.95
Transparency film (A4 50 sheets)	£31.95
Primera premium paper (A4 200 sheets)	£18
T-Shirt transfer paper (A4 10 sheets)	£17.95

INCREASE YOUR HARD DISK CAPACITY



NO SWEAT!

DiskExpander is an innovative program for all Amiga users. With this software solution you may double the capacity of your floppy disk or hard disk drives. The installation process takes only a few seconds and afterwards DiskExpander works invisible in the background. The compressions-ratios vary from 30% to 70%.

The easy-to-use graphical user interface guarantees that even the inexperienced user is able to use DiskExpander immediately without any problems. DiskExpander does not only expand the capacity of your hard disk drive, even floppy disks now have a storage space of approximately 1.5 megabytes.

expander *features*

- Can add 50% to your hard drive capacity at a stroke
- Fast compression and decompression
- Flexible and expandable as new compression libraries are developed
- Works with all drives, including SCSI, IDE, Floppies, and even the RAD disk
- Reliable in tests - no data corruption
- Once installed the program is transparent to the user

Disk Expander	£35

Power Computing Ltd
Unit 8 Railton Road
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Telephone 0234 843388

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